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OF THE

REAU OF LABOR STATISTICS

OF

CALIFORNIA.

FOR THE YEARS 1883-4.

ANNEX

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First—In agriculture.

Second—In mechanical and manufacturing industries.

Third—In mining.

Fourth—In transportation on land and water.

Fifth—In clerical and all other skilled and unskilled labor not above enumerated.

Sixth—The amount of cash capital invested in lands, buildings, machinery, material, and eans of production and distribution generally.

Seventh—The number, age, sex, and condition of persons employed; the nature of their nployment; the extent to which the apprenticeship system prevails in the various skilled dustries; the number of hours of labor per day; the average length of time employed per nnum, and the net wages received in each of the industries and employments enumerated.

Eighth—The number and condition of the unemployed, their age, sex, and nationality, gether with the causes of their idleness.

Ninth—The sanitary condition of lands, workshops, dwellings, the number and size of rooms cupied by the poor, etc.; the cost of rent, fuel, food, clothing, and water in each locality of e State; also the extent to which labor saving processes are employed to the displacement of and labor.

Tenth—The number and condition of the Chinese in the State; the social and sanitary habits; umber of married, and of single; the number employed, and the nature of their employment; he average wages per day at each employment, and the gross amount yearly; the amounts xpended by them in rent, food, and clothing, and in what proportion such amounts are xpended for foreign and home productions, respectively; to what extent their employment omes in competition with the white industrial classes of the State.

Eleventh—The number, condition, and nature of the employment of the inmates of the State rison, county jails, and reformatory institutions, and to what extent their employment comes competition with the labor of mechanics, artisans, and laborers outside of these institutions.

Twelfth—All such other information in relation to labor as the Commissioner may deem sential to further the object sought to be obtained by this statute, together with such stric- res on the condition of labor and the probable future of the same as he may deem good and lutary to insert in his biennial reports.

Sec. 4. It shall be the duty of all officers of State departments, and the Assessors of the rious counties of the State, to furnish, upon the written request of the Commissioner, all the formation in their power necessary to assist in carrying out the objects of this Act; and all inting required by the bureau in the discharge of its duty shall be performed by the State inting Department, and at least three thousand (3,000) copies of the printed report shall furnished the Commissioner for free distribution to the public.

Sec. 5. Any person who willfully impedes or prevents the Commissioner or his deputy in full and free performance of his or their duty, shall be guilty of a misdemeanor, and upon nviction of the same shall be fined not less than ten (10) nor more than fifty (50) dollars, or prisoned not less than seven (7) nor more than thirty (30) days in the county jail, or both.

Sec. 6. The office of the bureau shall be open for business from nine (9) o'clock a. m., until e (5) o'clock p. m. every day except non-judicial days, and the officers thereof shall give to persons requesting it all needed information which they may possess.

Sec. 7. The Commissioner shall have power to send for persons and papers, whenever in opinion it is necessary, and he may examine witnesses under oath, being hereby qualified administer the same in the performance of his duty, and the testimony so taken must be ed and preserved in the office of said Commissioner; he shall have free access to all places d works of labor.

Sec. 8. The Commissioner shall appoint a deputy, who shall serve the same time and have same powers as the said Commissioner, as set forth in the preceding sections; he shall cure rooms necessary for offices at a rent not to exceed fifty (50) dollars per month, and y provide the necessary furniture at an expense not to exceed five hundred (500) dollars.

ec. 9. The salary of the Commissioner shall be twenty-four hundred (2,400) dollars per um, and the salary of the Deputy Commissioner shall be fifteen hundred (1,500) dollars per um, to be audited by the Controller and paid by the State Treasurer in the same manner as er State officers are paid; there shall also be allowed a sum not exceeding five hundred (500) ars per annum for stationery and other contingent expenses of the bureau.

ec. 10. The sum of ten thousand five hundred (10,500) dollars is hereby appropriated, out ny money in the State Treasury not otherwise appropriated, for the expenses of the bureau the first two years after its organization.

ec. 11. This Act shall take effect and be in force from and after its passage.

It will be seen that the bureau is intended to cover an enormous ld of action. To cover it is doubly difficult on account of the uctance which is found throughout society to give information ncerning matters which in a certain sense are private, and have cer- nly always been considered so. The officers of the bureau, accord- ly, have often met with difficulty necessitating argument in order btain desired information. It is pleasant to state, however, that in no case has it been necessary to resort to extreme measures t acquire the desired end. Generally a very little reflection has convinced all that the officers are working for the general good and fo no other purpose. Still, the bureau has been hampered to a certai extent by this sometimes annoying addition to its already formidabl list of labors. But it is also just to say that the greater amount o information acquired was given voluntarily by those who take a interest in the advancement of our labor and industrial interests and who are anxious that the Legislature should be furnished with full and correct information upon all subjects liable to assist th members in arriving at just conclusions and estimates relative to th necessity of all measures concerning the condition and welfare of th laboring classes. Statistical facts only will enable a Legislature t proceed intelligently on questions of industrial and labor legislatio In this report, therefore, it has been my constant aim to present fact and not theory. No subject has been more generally philosophize upon than that of labor, and for that very reason I have abstaine from indulging in speculations upon so ramified a subject.

CHAPTER II.

THE LABOR QUESTION.

In considering the condition of labor in this State it should at no
me be overlooked that California, up to a few years ago, was never
hought of as a manufacturing State. We commenced with mining,
ontinued with agriculture, and now suddenly see displayed before
s the grandest possibilities are following the arts and manufactures.
onsequently, while factories are springing up on all sides, we have
o manufacturing population. Five years ago the question was:
What shall we do with our girls and boys?" To-day there are not
nough of them at certain seasons of the year to supply the market.
truce has been struck between capital and labor, as there always
ill be when there is work for all and wages sufficient for the work-
an to maintain and rear families. California to-day has no pauper
opulation, except that which has become voluntarily so, and which
erefore is classed much more properly among the vicious and crim-
al classes. Scarcity of labor and help always acts as a deterrent
struggling industries and retards incipient enterprises. Capital,
erefore, is anxious to encourage immigration, while labor is rather
clined to discourage it. You will find in this condition of things
e explanation of the apparent contradiction as to the condition of
ade from the standpoint of the employer and employé.

Take, for instance, the foundry business. The employers will uni-
rmly tell you that business is excellent and that skilled mechanics
e wanted, while the workmen insist that business is bad, that there
an abundance of help, and that a decrease in the wages of labor is
nminent. It is the old story of the struggle between capital and
bor over the control of the market. However, a careful investiga-
on has convinced me that an increase of the laboring population
n which term I include skilled artisans and mechanics) is not at
resent desirable and that it will not inure to the mutual advantage
employer and employé. Certain industries are oversupplied with
elp, and unless there is an extension of trade there is danger of
owding the labor market. But it is also true that capital stands
ady to invest in most any enterprise upon the slightest encour-
gement, and that no better encouragement can be offered than the
surance that there is a sufficient supply of help. Here, as in all
ings, it is to the advantage of both sides to mutually yield some-
ing.

In other branches of enterprise there is a positive scarcity of labor
l the year round, a fact which is supposed to keep wages high and
hich is consequently a benefit to those who are engaged in it.
othing, however, could be a greater mistake. It simply opens the
arket for eastern competitors, sends money out of the State which

should remain here, and in the end cuts down the profits of employer and employed to the basis of cheap Eastern labor. These remarks apply not only to the mechanical trades, but to agriculture and horticulture as well. In this class of industry, of course, the idea of eastern competition and its evils is excluded, but in its stead we have the arrested development of the resources of the State, which means not so much that millions of acres of land will continue to be uncultivated, but that those who have undertaken to turn the sod and make it bring forth will have no markets for their products. It is the disposal and not the creation of products which brings wealth and prosperity. It is a deplorable fact that during the past years both these factors have suffered severely from the want of help. We have heard and have indeed known of fruit remaining unpicked on the trees and grapes remaining ungathered in the vineyard. Grain has remained in the fields exposed to the rain because men could not be secured to thrash it, and hay has rotted in the stacks because there were no farm hands to handle it. Farmers have been compelled to take what help they could get, whether they were white or Chinamen, nor has it been a strange sight to see in California women and children labor in the fields. Boys and girls, in fact, have been in great demand in the vineyards, on the hop farms, and in the berry gardens. Here the work was light, agreeable, and remunerative—three qualifications which deprive it of every objectionable character.

Hitherto the one great objection to an increase of the unskilled white labor population in California has been, that necessary as it was to have more help during Summer and harvest, the manner of husbandry in this State was such as to assure those who labor for others, work only for three, or at the highest, five or six months during the year. It was admitted to be an unnatural condition of affairs, and one which should be remedied, but which, under prevailing circumstances, could not be changed, especially as long as Chinamen in sufficient numbers could be hired during the busiest seasons of the year. But now Chinamen can no longer be hired at will, for they are as scarce as white laborers and demand fully as much pay. What is to be the result? Here, in my estimation, is the greatest and most important problem which the people of California will have to solve. The coming of Chinamen was tolerated and encouraged for many years. As a natural consequence they made for themselves a place in the industrial economy of the State, preventing thereby the natural increase and provision for a white laboring population. Employers could not expect white laborers to spring out of the ground, when the Chinese influx ceased; nor can they now expect to remedy the evil, which a short-sighted policy, preferring a homeless wandering heathen to a settled American with a family, brought upon them, [illegible]out suffering the consequences. But the great danger is that [illegible]re unwilling to suffer these consequences, and that rather than [illegible]rgo the annoyances of a settlement which would, once for all, put the question of labor upon a right basis, they will look only to the immediate future and continue to encourage or begin again to encourage Chinese immigration. I take pleasure in stating, that on account of the strong anti-Chinese feeling pervading all classes, the danger is remote. But reason is apt to stop at the purse and the fuller the purse the less apt is reason to overcome the obstacle.

We must expect and may look for a pro-Chinese agitation from certain classes, which will urge as its one great excuse the scarcity

Office of State Bureau of Labor Statistics,
San Francisco, September 30, 1884.

To his Excellency George Stoneman, *Governor of California:*

Sir: In accordance with the law passed by the Legislature, approved March 3, 1883, I have the honor to submit to the twenty-sixth session of the Legislature, through you, the first biennial report of the Bureau of Labor Statistics.

Very respectfully,

JOHN S. ENOS, Commissioner.

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ERRATA.

Page 131, twelfth line from top, for "answers," read "answerers."

Page 169, Japanese in California, for "86," read "186."

Page 189, line 21, in "$91,675,024,800," leave out first "9"; line twenty-two in blank, read "49 years."

Page 232, in table for 1883, for "8," read "7."

Page 233, in first table for 1883, for "8," read "7"; in second and third tables, for "2,220,000," read "2,220,000,000."

CHAPTER I.

THE SCOPE AND AIM OF THE BUREAU.

The Legislature of California, at its session in 1883, animated by the progressive ideas which seem to be the birthright of the people of the Pacific Coast, enacted a law establishing a Bureau of Labor Statistics. The Governor approved the Act on March 3, 1883; and soon after, having appointed the Commissioner, the bureau was established in the City of San Francisco, which, being the industrial and commercial center, presents the field wherein the greater portion of the labor of this bureau has to be conducted. The Bureau of Labor Statistics was established at a time when enterprising capital was reaching out for and encouraging industrial development. The State just then had emerged from a period of commercial depression, and new avenues of investment and development of resources were then being eagerly sought and discussed. That was, indeed, the leading characteristic of commercial and industrial life at that time, as it is to-day, though in a greater degree.

Could the motives of the honorable Senators and Assemblymen who voted to establish this bureau be inquired into, it would, no doubt, be found that they obeyed but the general impulse and desire in casting their votes to put the prosperity of this State upon the firmest basis, by advancing its industrial interests. Therefore this bureau, if established for any purpose, was established for a practical one; and to carry out that purpose necessarily involved an enormous amount of labor, indefatigable industry, and not a small amount of practical knowledge. It is the more to be regretted that the Legislature, in its wisdom, saw fit to make the appropriation at my disposal entirely too small to accomplish that which should be accomplished in order to make this bureau what it should be. However, I am aware that Bureaus of Labor Statistics are still looked upon as in the experimental stage, although they are not so in reality. For, wherever established, they have rendered invaluable service, in furnishing data and information, without which the Legislature and the public at large could never have arrived at a just estimate of our industrial condition. Those who have watched their operations are, therefore, no longer doubtful concerning their usefulness. They admit their necessity, and marvel that so valuable adjuncts to the body politic should not have been established long ago.

To Massachusetts belongs the honor of having established the first Bureau of Statistics of Labor. This was in the year 1869. Pennsylvania followed, in the year 1872. Ohio next established a bureau, in 1877; and New Jersey, in 1878. Then their usefulness was recognized; and in 1879, Missouri, Illinois, and Indiana followed the example. Again, in 1883, New York, Michigan, Wisconsin, and our own State of California fell into line; and, in 1884, Iowa, Maryland, and the National Bureau were established. I append herewith a table showing the appellation of these bureaus, their location, the chief officers, and the year of their establishment, for easy reference:

BUREAUS OF STATISTICS OF LABOR IN THE UNITED STATES.

States.	Name of Office.	Year established in	Presiding Officer.		Post Office Address.
			Title.	Name.	
Massachusetts	Bureau of Statistics of Labor	1869	Chief	Carroll D. Wright	Boston
Pennsylvania	Bureau of Industrial Statistics	1872	Chief	Joel B. McCament	Harrisburg
Ohio	Bureau of Labor Statistics	1877	Commis'r	Henry Luskey	Columbus
New Jersey	Bureau of Statistics of Labor and Industries	1878	Chief	James Bishop	Trenton
Missouri	Bureau of Labor Statistics and Inspection	1879	Commis'r	H. A. Newman	Jefferson City
Illinois	Bureau of Labor Statistics	1879	Secretary	John S. Lord	Springfield
Indiana	Bureau of Statistics and Geology	1879	Chief	W. A. Peelle, Jr.	Indianapolis
New York	Bureau of Labor Statistics	1883	Commis'r	Chas. F. Peck	Albany
California	Bureau of Labor Statistics	1883	Commis'r	John S. Enos	San Francisco
Michigan	Bureau of Labor and Industrial Statistics	1883	Commis'r	John W. McGrath	Lansing
Wisconsin	Bureau of Labor Statistics	1883	Commis'r	Frank A. Flower	Madison
Iowa	Bureau of Labor Statistics	1884	Commis'r	E. R. Hutchins	Des Moines
Maryland	Bureau of Statistics of Labor	1884	Chief	Thos. C. Weeks	Baltimore
Washington	National Bureau of Labor Statistics	1884	Chief	Thos. Connery	Washington

The Act under which this bureau is now exercising its functions is as follows:

CHAPTER XXI.

An Act to establish and support a Bureau of Labor Statistics.

[Approved March 3, 1883.]

The People of the State of California, represented in Senate and Assembly, do enact as follows:

SECTION 1. As soon as possible after the passage of this Act, and every four years thereafter, the Governor of the State shall appoint a suitable person to act as Commissioner of a Bureau of Labor Statistics. The headquarters of said bureau shall be located in the City and County of San Francisco; said Commissioner to serve for four (4) years, and until his successor is appointed and qualified.

SEC. 2. The Commissioner of the bureau, before entering upon the duties of his office, must execute an official bond in the sum of five thousand (5,000) dollars, and take the oath of office, all as prescribed by the Political Code for State officers in general.

SEC. 3. The duties of the Commissioner shall be to collect, assort, systematize, and present, in biennial reports to the Legislature, statistical details, relating to all departments of labor in the State, such as the hours and wages of labor, cost of living, amount of labor required, estimated number of persons depending on daily labor for their support, the probable chances of all being employed, the operation of labor saving machinery in its relation to hand labor, etc. Said statistics may be classified as follows:

of labor and the impossibility of making white people take the place of Chinese. They will not work "for Chinese pay and Chinese treatment," but that will, no doubt, be the second great cause of their philo-coolie proclivity. Still, the fact remains that white laborers are urgently required to take the place of the absent coolie, and that employers, if they want to secure their laborers, must offer them such inducements as Caucasians may expect.

If the size of their landed estates and the mode of cultivating them preclude the employment of civilized labor under civilized conditions, it is better that such estates lay waste, than that they be made the means of perpetuating the coolie system. It is now for the people of California to choose whether they will take advantage of such benefits as the "Restriction Act" confers, or whether they will wink at the violation of its provisions to obtain a renewed supply of the "Heathen Chinee."

Such being the condition of the labor market it follows that the condition of the laborer corresponds with it.

In the first place, as has been stated already, labor finds employment without much difficulty, although the opinion prevails with certain classes that the supply is quite equal to the demand. In the second place, the industrial development being recent, certain practices, which prevail in the East, such as the system of paying wages in orders on stores, and other abominations, have not yet, and it is to be hoped never will, find a foothold in this State. Again, our laws are liberal and seem to recognize the scriptural admonition, that the laborer is worthy of his hire, and the result is that the man who works generally receives his pay in hard cash, and is left to spend it as he sees fit.

It may be said here at once, that also in the amount of pay received, even taking into consideration the slightly higher cost of living, California wage-earners have decidedly the advantage of their eastern brethren. Of course it is not desired to convey the idea that labor in this State is always well paid, or that the pay is in every case enough. The statement is wholly a comparative one. It is a sentiment implanted in the human breast that every man should value his work highly, and it is an incentive to progress and an inducement to renewed exertions that every man hopes to be able to increase his earnings, and for these reasons alone it would be unfair to assume that laborers and mechanics in this State are always paid well enough. On the contrary, in some branches of the industries, the wages, though high apparently, will be found to yield but a small annual income. It would lead too far from the purpose of this portion of my report to inquire into the rates of wages and make comparisons at this place, the intent here being to show the natural condition of the wage-worker in general terms. Nothing is more interesting and more important than to learn how he lives.

Here again it can be truly said that in this State the mechanic or laborer lives far better than his eastern colleague.

Look at the one item of house-rent. Even in the City of San Francisco there are no tenements, or anything approaching to them. Nearly every family can afford to live in a house by itself, or have at least a flat, with abundance of air and light. Few families are found, even when they consist of but two persons, who occupy less than three rooms. Rent is relatively lower than any other necessary of life, landlords being now well satisfied to receive six per cent net upon their investments.

Again, there is an abundance of houses to select from in nearly all parts of the city, so that the employed are seldom compelled to spend long hours, which should be devoted to rest and recreation, in going to and coming from their shops and factories. As a rule, the houses of all classes will be found to be clean, light, and airy. There is little squalor and filth to be found in any part of San Francisco, and even "Tar Flat" and the "Barbary Coast" have nothing to show that will approach the wretchedness known to exist in other cities. Of course no reference is here made to the condition of Chinatown. The well-housed condition of the laboring classes has great influence upon their sanitary condition. The vital statistics of the Board of Health are more eloquent upon this subject than I ever can be, and to them I would refer the inquirer.

But there is another subject intimately connected with this question, that of our mild climate, which enables people to enjoy outdoor life all the year round, and which makes stoves, except for cooking, unnecessary even in midwinter. The saving in the matter of fuel is not the only advantage in this connection. There is a much greater and more important one. It is that the cost of building houses is much smaller than in countries where the cold of Winters has to be guarded against. A temperate industrious man finds here less difficulty than anywhere else in becoming the owner of the house he lives in.

Next, as to the matter of food, there are some of the necessaries of life which can be had very cheap, while there are others which sell so high as to put them almost out of the reach of people of limited means. To the former class belong flour, potatoes, fruits, tea and coffee, rice, beans, fish; and to the latter, meat, many kinds of groceries, and, strange to say, vegetables, which should be cheap and abundant above everything else. Fowl and game are also high-priced articles.

In the matter of clothing, also, the California consumer is at a disadvantage. Although many million pounds of wool are raised in this State it is but little manufactured into clothing here. We prefer to ship the wool East and bring back ready-made clothes, containing more shoddy, jute, and cotton than wool, and to add to its cost that of double transportation.

Finally, in the matter of amusements it may be safely said that the California workman and mechanic knows how to extract more pleasure and enjoyment out of life than the people of any other country, paying therefor, however, a disproportionately larger sum. One cause of this happy condition of things is that Sunday with us is not only a day of rest, but also of recreation. It would indeed be wrong to say that the people are not religious, for they are; but they are certainly averse to burying themselves in their houses on Sundays in accordance with the narrow-minded teachings bequeathed to the world by the Puritans.

There is still another feature which is calculated to make the lot of the wage-worker more pleasant, and that is the spreading tendency to shorten hours of labor. It is now recognized that the laborer requires not only time to rest, but also time to devote to his family and to improve his mind, and there is a growing disposition to curtail the hours of labor accordingly. Again, it will be found that the citizens of California value life and its cares more easily than those of the East. There is less intensity in the pursuit of gain, if the love of money is as strong; and this disposition to take life more coolly makes itself felt in every branch of industry, and particularly in those which have been longest established, as strangely enough those who have been longest in the country are also most disposed to yield to the inclination to save their nervous powers.

Still another subject which is intimately connected with the material condition of the laboring classes is the employment of children in factories, mills, and other industrial establishments. It being against nature that little children should work, it is always found that the average parent is unwilling that his child should labor when he is able to win bread enough for the whole family. Accordingly, in those places where young children do work, they work out of necessity and because their wages are needed for the support of the family. As a rule, the California mechanic and laborer is too well conditioned not to be able to allow his child to enjoy the benefits of a public school education, and for this reason few children under fourteen years of age are found in the shops and factories, despite the fact that there is a great and growing demand for the youths of both sexes in numerous avenues of the industries. It is seldom that a child's earnings are required to help support a family; and when they are, it will generally be found that sickness or some other calamity is the cause. It furnishes additional proof that the condition of the wage-earning class is good and prosperous.

Lying peculiarly within the sphere of government control is the apprentice question. It is a subject fraught with importance to both capital and labor, and the importance of which promises to increase as the necessity for training skilled labor becomes more and more essential to the progress of industrial arts. The law and system of apprenticeship, as they exist at present, are a remnant of the middle ages, when admittance to all trades was wholly in the control of guilds.

We have in our time trades assemblies and unions, the members of which are striving to obtain control over the number of apprentices to be admitted to learn the trades in the various workshops. This has been, and will continue to be, a fruitful source of difference between employers and employés, and has led to strikes more than once. For instance, the iron molders have a rule that there shall be admitted but one apprentice to eight journeymen molders in any foundry. It is but natural that the employers should attempt to break down this rule, for they are directly concerned in creating a full supply of skilled labor, and it is just as natural that the trades union men should be fully as anxious to maintain the rule, for it is to their interest to have the supply of skilled hands short, that wages may continue high. It is self-protection on both sides, but it does not protect the youth anxious to learn a trade, and that is where it works wrong. The matter of supply and demand may always be left to regulate itself, but the young man desirous of learning a trade should receive encouragement instead of discouragement. Besides, this curtailment of the number of learners is rapidly reducing the condition of American apprentices to the European standard. Formerly, every man or boy in this country who worked, whether he was learning or not, received pay. At present, it is not at all unusual for a boy to pay a bonus for the privilege of learning a trade. Much, of course, is to be said on behalf of the journeymen, who object to the indiscriminate increase of the apprentice force in the shops, and altogether the question is one which requires careful study and elucidation before a solution should be attempted.

Closely connected with the subject of apprentices is another, and one which is now attracting much attention. It is that of industrial education and technical schools. No part of the public funds in this State is now appropriated for such purposes, the acquisition of industrial education being left to individual effort. Yet to an unbiased observer it appears rather strange that in an age when the exact sciences are cultivated to the highest degree, a State which makes some pretension to being or becoming a manufacturing commonwealth, the cause of technical education receives no State aid. It is one of the idiosyncracies which we have inherited from the old world, that the boy who desires to learn the dead languages should be enabled to do so at the expense of the State, while he who endeavors to acquire a knowledge of practical things which tend directly to make the country powerful and rich must depend upon his own means and exertions. The youths of California are more than eager to embrace every opportunity to acquire technical knowledge, as is shown by the crowded attendance at the solitary class in one of the San Francisco night schools where technical draughting is taught. A foundry firm, which undertakes to give its apprentices not only practical but also theoretical instruction, has a similar experience. Here the applications by young men to be admitted to apprenticeship are always far more numerous than are the openings, and among them are not only those of the sons of poor men, artisans, and mechanics, but of the sons of some of the richest and most influential of our citizens. These apprentices do not come to learn a trade simply, they come to learn the whole business from the bottom up. Yet even here the journeyman's rule restrains the admissions, although it is admitted that these apprentices will never contribute to crowd the labor market; on the contrary they will increase the demand for skilled labor. This particular establishment has already trained up a large number of young men, practically and theoretically, and among them there are many who have at once jumped to the head of their profession. They are in great demand in various parts of the coast, Mexico, the Hawaiian Islands, China, Japan, and even Africa. Wherever an industrial concern needs a skilled foreman, or engine-builder, or foundryman, these young men are sent. They have the reputation of being well trained, and their work sustains their reputation. The result is that the trade of the establishments, which are under the management of San Francisco trained boys, is directed to this city. Hundreds of orders for pumps, engines, boilers, and other machinery have been secured just in this manner.

San Francisco is recognized as the proper source from which to draw supplies of that kind. It is folly to maintain that the whole State has not been benefited in this manner. No stronger, or a more convincing plea, in behalf of industrial education, can be adduced, in my humble opinion. Of course, the trade unions claim that the limitation of the number of apprentices is a measure of self-protection, and in some cases of self-preservation. It is the old feud between capital and labor, only in a different form. It is certain that the trades unions must look out for themselves and their interests, for even the best intentioned employer cannot maintain a high rate of wages in the face of a glutted labor market, of which his competitors in trade are taking advantage. But is not the limitation of apprentices a two-sided arrangement, and a sword that cuts both ways? Is it not a direct inducement to manufacturers to encourage the immigration and importation of eastern skilled labor, while it keeps the boys of our own people away from honest work, making hoodlums and worse out of them? Are not our reformatory institutions filled with young men who never learned a trade, but who, if they had, might to-day lead honest lives?

There is still another matter closely identified with California labor matters, and that is the extension of the manufacture of home products. Ours is a producing State, preëminently so, and it is plainly to our advantage to prepare the things we produce for the consumer as much as we can. Yet the fact is, that not only do we make use of but a small percentage of our resources, but, further, that the greater portion of our products pass into the world's market in their raw state. In every direction inquiries as to the cause of this state of affairs are answered by the statement that the supply and cost of labor is such as not to allow the conversion of these products into manufactured goods. Now, it is undoubtedly a fact that in many cases the cost of labor is so high in this State as to preclude the idea of ever successfully establishing certain industries in this State, unless labor saving machinery should make it possible. This is the case where our labor would come in competition with European pauper or Chinese coolie labor, as in sericulture. The establishment of these industries at such a price, instead of being a benefit, would be a calamity. But there are many other branches which are neglected from the lack of skilled labor only.

Capitalists are much averse (not to paying high wages, for that is a matter that does not affect them at all as long as they can compete with other sources of supplies), but to embark upon enterprises which they may have to abandon on account of the uncertainty of the supply of labor. It is true that unusual encouragement has been given to home industries during the past three years. Our people seem to have realized that prosperity comes not only from producing, but also from making use of the products of the soil. They have discovered that we buy abroad many things that we can produce ourselves, and they are making a brave attempt at doing so. I take little hesitation in saying that this expansion of the home industries has contributed more to the prosperity of our State during these years, than has the abundant rainfall, upon which alone hung formerly our hopes and fears of bountiful harvests and active trading. It is a movement that is deserving of all the encouragement that can be given it from any side. The possibilities of California's industrial future are great indeed. They are so great that the highest estimate can hardly be too high, and it is now that we are laying the foundation to her future greatness.

CHAPTER III.

INDUSTRIAL DEVELOPMENT.

The difficulty which this bureau meets with in reviewing the condition of the various industries for the first time, consists in the fact that hitherto no settled attempt has ever been made by any person or body in this State to acquire any information or to gather statistics concerning them. So little attention has been given to the development of our industries that many have sprung into being and prosperity without ever becoming known, and to this very day our people buy as eastern and foreign goods those that are manufactured right in their own midst. Again, the limited means at the disposal of the bureau have forbidden as extensive researches as might be wished, and many sources of knowledge which might have been availed of have necessarily been closed against me. It should be further understood that the scope, purpose, and necessity for a Bureau of Labor Statistics is yet but little understood, and that much information that should have come to us quite readily, has been kept from us, consequently the reports are not as particular in their statements of facts as they might be. However, as will be seen, much has been accomplished.

IRON AND STEEL.

The iron industry is one of the most promising in this State, and one which has made considerable progress during late years. The efforts to work native iron ore have been more than successful, and to the list of the products of our State has certainly been added that of iron. In the heart of the mountains, where in 1849 the hardy miner looked for gold, there is now heard the roar of the blast furnace, and the sides of the hills yield the baser but more useful metal. The production is as yet restricted, for, like all infant enterprises, it has had its backsets. But enough has been done to show that iron mining can be made to pay, and that the quality of California pig-iron entitles it to the first place when that particular matter comes into question. So far, the owners of the works have been able to successfully compete with the importers of foreign iron. It must be remembered, however, that the output has been too small to constitute a large factor in the market, and it remains for the future to demonstrate what shape matters will take when the yield shall have become large enough to affect the import trade. The success of the works at Clipper Gap has led others to imitate their example. Valuable deposits of iron ore have been discovered in various parts of the State, and the owners of several of these are now preparing to work them. Great things are expected from these enterprises, and it is to be hoped that these not unreasonable expectations may be duly fulfilled. The iron industry has made good progress also in other branches. Some years ago when mining operations became less active, the foundries and shops which found the mines their best customers, were quite seriously affected by the loss which a cessation of that class of work entailed upon them. It was then thought that there was not enough work of other descriptions to keep all the establishments busy, and it was freely predicted that a good many of the machine works would soon be idle. These anticipations of disaster have happily proved false. It is true there was a depression for a time, but instead of resulting in permanent loss, it ended in advantage. The question having resolved itself into a struggle for existence, the foundrymen and machine-builders bravely met the issue. They soon found that other classes of work paid as well, and they soon found enough of that to keep them all busy. In the end, not a single shop was compelled to close up, and to-day the smoke of innumerable chimneys gives evidence of the prosperity of this branch of industry, which is now established on a firm basis, for it is now supplying the wants, not of a single class, but of a growing and prospering industrial community. The industry has branched out considerably, especially in the last two years. Our local manufacturers are enterprising and quick to take advantage and make use of new inventions. The discovery of new processes of making steel has been promptly followed by the erection of new works. One of them has been successfully in operation in Oakland for some time past, and finds that it is on paying ground, and that none of the suppositious causes of the foretold failure have so far made themselves felt. These works are run in connection with the Clipper Gap iron mine, converting its product into malleable iron and steel. Another work has been temporarily established at Melrose, also in Alameda County. Here, too, a new process of making steel has been tested, and with so much success that the promoters of the enterprise are now looking for a site on which to locate permanently. The third establishment of this kind is now in course of construction at Benicia, the citizens of that town having offered the inventor and others interested in his patent process of converting iron into steel, handsome inducements to locate in that town. It is yet too early to speak of the success of that enterprise, for its forges have hardly yet been lit. In addition to these, the Union Iron Works, in connection with their extensive new establishment at the Potrero, in the City of San Francisco, will erect and operate steel works which are to be second to none in the State. Then there are the Rolling Mills people, also located at the Potrero, who have just erected an addition to their works, which is to be specially devoted to the manufacture of steel. Next, a large iron works is being erected at Los Angeles, if, indeed, that establishment is not already in full operation when this report leaves the printer's hands. Finally, and fully as important as the preceding, a number of capitalists have become interested in the iron deposit found in the vicinity of Colton, and have begun the erection of furnaces for the purpose of working them. It is reported that this company will manufacture, as well as produce. The older iron working establishments, the foundries, machine shops, boiler shops, especially those of San Francisco, have also gradually extended their capacity. But it should be borne in mind, with regard to these, that they have just passed through a transition period, for, as in former years, their work was principally for the mines, now it is for the commercial, agricultural, and industrial interests. If some of them have not made as much progress as others, it is simply because the latter more quickly saw the signs of changing times, and seized the iron while it was only beginning to get hot.

Brief as this review of the iron industry is, it would still be incomplete if mention was omitted of the period of depression which prevailed in the Spring of the year 1883, and which deterred many from progressing with the enterprises then about to be put into execution. The Winter of 1883 was an unfavorable one to the iron industry of the whole United States, and particularly in the Eastern States, where there was a general shutting down of mills and furnaces. Over-production was the cause, and, as is always the case, an over stock led to lower prices. There was no over-production on the Pacific Coast, but the eastern reduction of prices was soon felt here, and all establishments which were competing with eastern goods were compelled to make similar concessions. This competition finally became so great as to make local manufacture unprofitable, and in the end quite a large number of hands had to be discharged from various establishments. Matters in the East began to mend again in the Summer of 1884, and since that time our local manufacturers, also, have been slowly regaining ground.

In this place may also be properly considered the nail and tack-making industries. Both have but lately been introduced in this State, and both have so far met with the most gratifying success. Indeed, the success of the nail factory has surprised even the most sanguine. The factory is a well appointed and large one, and capable of supplying a great portion of the home demand for that useful little article, the nail. However, the new enterprise has also had its trouble, this being nothing less than a strike of the nailmakers. To properly learn to run a nail-making machine is supposed to require years of learning and experience, and the places of these men, therefore, could not be filled satisfactorily by green hands. The cause of the difficulty was a difference between employer and employés about wages, in which a new invention, termed a self-feeder, played an important part. In short, the men demanded a certain remuneration, and the company offered another, and neither being willing to yield, the strike was the result. But it is in evidence that the men did not strike because they thought their pay insufficient, but because they thought they were able to get more, having the company in a corner, so to speak; for the fact is that the pay of some of them, all doing piece-work, averaged from $9 to $18 a day. The formation of a Union of the Amalgamated Ironworkers' Association, with and under the advice of recently arrived nailmakers from the East, is also alleged to have had something to do with the strike. A few weeks of negotiations proving fruitless, the company put on a bold front and set green hands to work. The strikers viewed this move with derision, but the company has steadfastly adhered to its purpose, and for months the mills have been running with the aid of this labor. The green hands have not been a great success, neither have they been a great failure, and the strikers were finally defeated by trained nailmakers brought from the East.

The mills which, when running full, distributed about $15,000 monthly in wages, now put about one half that sum in circulation. The tack factory has had no such difficulty. Here a large number of boys and girls have found steady employment all the year round, and at wages far above those paid by any similar establishment in the East. During the first year of its existence it has disbursed over $100,000 in wages alone.

SERICULTURE.

The subject of silk culture has already received the attention of the Legislature, and it would hardly be the duty of the Bureau of Labor Statistics to report upon the condition and prospects of that industry, if its establishment did not involve a question of labor which will become a very important one. It should be understood, first of all, that if silk culture is not a success, its want of success is due to this very labor question. The chief silk-producing countries are Italy, France, China, and Japan. In those countries labor is cheap, and because it is cheap silk culture is profitable, and, correlatively, it is because the cost of labor is high, silk culture is not successful in the United States, and least of all so in California. There are certain processes in the manufacture of silks which can only be done by hand. Of such is the reeling of the cocoons, the most important as well as the most expensive and laborious of all processes. The cheap labor of the countries named above allows this work to be done at an almost insignificant cost compared to what it would be in the United States; and here is the problem which the advocates of silk culture will have to solve before they can make a financial success of it. Yankee ingenuity so far has vainly been called upon for an invention of a silk-reeling machine. No piece of mechanism has yet been constructed that possesses the same delicacy as the fingers of the human hand in handling the cobwebby fibers of the cocoons.

The popular mind is in the habit of confounding silk manufacture with silk culture. Silk manufacture has been successfully established in the United States and in this State also, but silk culture has not. The former obtains its raw material from abroad, after the reeling process has already been performed. The latter imports only silkworms and produces cocoons which are uselessly stowed away for want of reeling facilities, the first requisite of which is the cheapest of cheap labor. The State of California, in a wise endeavor to encourage the introduction of new industries, has given State aid and recognition to this also. But with all due respect to the Legislature which gave the appropriation, I doubt whether the subject was completely comprehended. It was certainly in the nature of an experiment. But narrowed down, the question becomes simply, whether or not it is desirable, wise, and expedient to attempt to introduce and establish an industry, the success of which depends upon cheap labor of the class employed in Japan, China, Italy, and France. Is it wise that the energies of California should be expended upon such an industry, when a thousand and one better, more promising, and far more surely profitable resources lie still unused and open to enterprising capital? Is it desirable to have a cheap labor population, when there are numerous branches of industries awaiting extension and ready to pay fair wages? In my humble opinion an industry which cannot prosper unless the help which it employs is kept at starvation wages, is a curse and a blight instead of a blessing to any people, and it were better that the site of a mill in which wretched little children and still more wretched grown men and women, earn too little to live decently, were seeded to potatoes than that it should be permitted to spread pauperism, immorality, ignorance, squalor, and want among the population.

The special plea is made in behalf of sericulture that it will give children an opportunity to contribute to the support of the family, and that it will furnish a light and pleasing occupation. But is it not a fact that the industrial situation in California is not to bring occupations to the labor, but to bring labor to occupations? It is the supply of labor which we lack much more than the number of occupations. Again, in the name of common sense, is this country and its population so impoverished, is a man's labor worth so little, that it becomes necessary for children to work? Has California come down to the level of British manufacturing towns, when children have scarcely time to learn their a, b, c, because all their young life is required in helping the parents to earn the daily bread! If child-labor is an evil, then is it not a greater evil to foster an industry which cannot prosper without it? Besides, our vineyards, and orchards, and hop gardens, furnish as large a field for work for our little ones as they are well able to cover, and as it is good for them to cover. For the remainder of the year the school house ought to claim them as its own. For these reasons I doubt the expediency of encouraging sericulture until the labor problem connected therewith is first solved, either by the invention of labor-saving machinery or otherwise.

THE BUILDING INDUSTRY.

Among the building trades there has prevailed a most active demand for labor of all kinds, ever since the year 1880, under which state of affairs wages have gone up, while the hours of labor have decreased. Indeed, the demands of contractors and builders were so urgent, especially during the Summer months, that the demands of all mechanics connected with the building industry had to be complied with without opposition. The advance in wages was general, and has been sustained in most cases, although the Winter months with their rains prostrated many building operations. The highest rate of wages paid, and the one at which first-class mechanics were still scarce, was $5 for plasterers, $5 for bricklayers, $2 50 for hod-carriers, $3 50 for carpenters, and $3 50 for painters, with the number of working hours reduced to nine, and in some cases to eight. The building activity was general throughout the entire State, and greater of course in the City of San Francisco. It is by no means an over-estimate to place the sum which has been expended in permanent improvements since 1880, in San Francisco alone, at $15,000,000. It is safe to fix the figure for 1884 at least at $5,000,000, and it was $4,500-000 in 1883. This building movement may justly be considered one of the most substantial signs of prosperity. An analysis shows that the improvements consist largely, very largely, of moderate sized houses, built by the owners of single lots for homesteads, and not by capitalists as investments. There are, of course, also, a large number of the latter, especially where the buildings are divided into so called flats, but the far greater number consists of single houses of convenient size, emphasizing what has been said already, that the industrious, competent wage-earner can, by perseverance and economy, earn enough to purchase and own the house he lives in.

San Francisco, especially, is becoming a city of homes. There is not known here such an institution as Mayday moving. Trucks laden with furniture are quite a rare sight at any time of the year. There is indeed a large floating population living in boarding houses and hotels, but they form but a small part of the whole, and though they formerly impressed upon the whole people a nomadic character, so to speak, which the uninformed still believe to exist; that is a supposition, than which nothing could be more erroneous. A visit to the outskirts of San Francisco will at once dissipate such a notion, for there in little valleys and streets, the existence of which many never dreamed of, will be found thousands of snug little cottages and houses, all holding happy families. Our population has become settled.

OSTRICH FARMING.

The experiment of ostrich farming undertaken in 1883 has been attended with fair success. Twenty-two ostriches were brought from South Africa and placed upon a suitable farm in Los Angeles County. There were eleven hens among the number, of whom six laid three hundred and two eggs, and five not at all. As the first eggs laid by ostriches do not hatch, attempts of having them incubated proved futile, for not one of the birds is over four years of age, although the African farmer from whom they were bought guaranteed them to be eight. Had any number of their eggs hatched out, the farm would have yielded a nice profit to its enterprising owners. As it is, their only return was a quantity of feathers, but few of which are rated as first class. The yield would have been larger if better care had been taken to keep the birds, who are very shy, away from strange sights and noises. These caused them to thrash their wings against the fences, to the total destruction of their valuable plumage. Greater care will be exercised hereafter to protect the birds from intrusion. At least last year's work on the farm was wholly experimental. It was intended to establish the theory that the southern California climate agrees with the ostrich, and that fact has been proved abundantly. The company has invested a capital of $30,000 in the enterprise. The farm contains two hundred acres, one hundred of which are seeded to alfalfa. It is claimed that the farm will support one thousand ostriches, and that it will not take many years before there will be that number on the land. The promoters of the enterprise are very sanguine of success, and are certain that this year's work will be satisfactory to all concerned.

A second farm was established near Mount Fairview, in San Diego County, in the Spring of 1884. It has been stocked with twenty birds, who were prospering at latest accounts.

THE LUMBER INTEREST.

The lumber interests of California are large and valuable. They give employment to many thousand men and bring untold wealth to the State. The necessity of preserving our valuable timber resources has already been recognized by the enactment of a law creating a Forestry Commission, which, no doubt, will report to the Legislature in full.

As falling within the province of the Labor Bureau of Statistics, I merely desire here to point out that the lumber dealers of San Francisco—and they control the market for the whole State—have entered into a contract, with penalties of forfeiture, which if not illegal, ought certainly to be made so, for the purpose of advancing prices and monopolizing the market.

It is, unfortunately, not the province of the State Legislature to interfere in the unlawful spoliation of government lands, which is carried on to a great extent, I am told. But I would, nevertheless, suggest that a full and thorough inquiry be made into the whole subject, for the forests of California are too valuable to be destroyed wantonly and indiscriminately. In addition, I would call the attention of the Legislature to the fact that a number of foreign (English) capitalists have invested heavily in California timber land, and are now reaching out for the control of the lumber business. They have a capital of $10,000,000, and have already managed to secure the mills and lands of five of the largest firms in the business up to the year 1882. Odious as a monopoly is to the American citizen under all circumstances, it becomes doubly so when those who are not citizens aim to establish and maintain one. It should be resisted by all possible means, and it is the duty of the Legislature to see that such gross abuses of our laws, which permit aliens and non-residents to own real estate in the same manner as citizens, do not occur.

That statute was as little designed to furnish speculating aliens with means to establish burdensome monopolies, to the great damage and injury of our own people, as it was intended to be an invitation to British lords and dukes to acquire large landed estates and establish landlordism; and it were better that the common law, which allowed only citizens to become owners of the soil, be reëstablished, than that the present one be made an engine of oppression and wrong by men who are less desirable than the poorest immigrant who comes to this country with the intention of making it his home.

In connection with this subject, it may be mentioned here that there is now being established a large sawmill on Big Farm Island, Alameda County, which is to work on logs to be towed down from the northern coast. It is a new departure in the lumber business.

COTTON GROWING AND MILLS.

Another industry, which it has been thought possible to introduce into this State, is the growing of cotton. That the plant prospers in certain portions of the State, especially in the south, was ascertained long ago, but it was less easy to determine whether it could be cultivated with profit. It was well understood that cheap labor was the great desideratum in this case also, and it was at one time held that the Chinese were the very element required. But a large land owner, who has devoted time and money to experimental cotton growing, soon discovered that the Chinaman would not do in California what the negro did in the South, although in all other respects the attempt was successful. The heavy expense for labor was the cause of the venture being profitless. White labor, under existing conditions, being out of the question, it was determined to try still another experiment—that of importing colored people experienced in cotton planting from the Southern States. Over a hundred of these plantation hands were secured and came to California last Winter, all housed by contract for a certain period, and at a rate of wages much below that current in this State. How this experiment will result remains to be seen. But, if it succeeds, it does so only, because these colored hands, knowing nothing of the rates of wages prevailing in this State, contracted at a lower rate than they will ever again agree to while the local labor condition remains unchanged. Consequently, what now may look like success will not be such, when the experimenter is compelled to rely upon the California labor market, as must eventually be the case. At best, the expediency of bringing cheap labor, and contract labor at that, is very questionable, and ought not to be encouraged.

In the manufacture of cotton goods, an attempt is also to be made. Early in 1883, a company was formed for the purpose of erecting a cotton mill. A convenient site was found in East Oakland, purchased, and the erection of buildings begun. The machinery was ordered in England. The company is reported to have a sufficiency of capital and to be composed of energetic men who may be relied upon to push the enterprise to a successful issue, if the conditions are fairly favorable. The company intends to draw its supply of raw cotton from the South, the Hawaiian Islands, Australia, and other countries, whence it can be brought here at sufficiently low expense to warrant the importation. In this respect, San Francisco is supposed to be situated as favorably, geographically, as any city in the Eastern States. I beg to suggest, however, that unless the advantages are sufficiently great to warrant the payment of better wages than are paid to New England mill operatives, a cotton mill will be a very doubtful blessing for this State.

JUTE AND FLAX WORKS.

The cultivation of jute has been discussed and experimented upon to some extent, with a view of domesticating it. For a number of years past there had been in operation in East Oakland, a jute mill, where the spinning and weaving of burlap was prosecuted with varying success. The raw material was obtained from Calcutta, together with a number of experienced hands from the same place. The scarcity of white labor led to experiments with Chinese labor, which, as in every other case, soon drove out the few white hands still employed. For a number of years the factory then was almost with Chinese labor, of whom, at certain times, upwards of six hundred were employed. Nothing but burlap for bagging was manufactured, and years when its manufacture yielded even a small profit, were the exceptions. In due course of time the stockholders grew tired of the losing investment, and just about the time when the State was going to invest in jute machinery for the State Prison, the Oakland concern shut down.

Strange to relate, where private enterprise had not succeeded, public enterprise did. The jute mill at San Quentin became a comparative success, and with this success came attempts to grow the raw material also. Here the same difficulty was met with which stares the advocates of silk culture in the face. It was easy enough to grow the plant, but the problem was to prepare it for the spinners. Jute, like flax and other fibrous material, requires certain preparation, and this preparation involves a character of labor which cannot be done by any machine so far invented. In India this labor is done by hand, and as labor there is extremely cheap, it follows that it will always be cheaper to import prepared jute than to grow it in this State, unless a machine be invented which would perform the labor more cheaply than it is now done by hand in East India. Those who experimented with jute and ramee in this State soon discovered the obstacles and abandoned their attempts for the time. The works at San Quentin continued to operate on the imported jute, and with the exception of the time when differences with the contractors for jute have left the institution without a supply of raw material, the establishment has been running with good success.

Those whose fortune had been embarked in the Oakland concern also took heart once more, and during 1883 a reorganization of that company was effected. New capital was put into the enterprise, and a new start made. The mill was fitted to make something else besides bagging, for machinery to manufacture matting, carpeting, rugs, etc., was added to the plant. The management further decided to get rid of Chinese hands as much as possible, and white boys and girls were given the preference whenever it could be done. It was a commendable undertaking and met with the success it deserved. The new class of goods manufactured met with a ready market, and within a few months the concern was on a firm basis.

Looking for further opportunities to extend the industry, the company next conceived the idea of attempting the manufacture of flax straw into textile fabrics. There are raised annually in this State, and in the neighboring State of Oregon, many tons of flax, the seed of which is the only part used, the straw out of which linen is manufactured, being permitted to rot in the field, or burned. Here, also, the difficulty is one which involves a labor problem. The flax straw also has to undergo certain processes, to be done by hand labor, which can be done in Europe so much more cheaply that the linen-making industry has never yet found a foothold in the United States. The Oakland company got a set of flax machinery, nevertheless, and succeeded in getting quite a quantity of flax pulp from Oregon. It seems that the operation paid fairly, for in this case the high rates of freight acted as a sort of a protective tariff, enabling the company to pay enough for the pulp to make the speculation reasonably profitable to the Oregonian. Further developments in this direction are awaited with interest.

It is all important to note that, according to very reliable reports, an eminent eastern machinist has just discovered a new method of preparing jute flax, ramee, or cotton fibers for the mills in so short a period of time, and at so small an expense, as to do away at once with the only obstacle which heretofore has prevented the successful establishment of the linen industry and of flax culture. This newly discovered process has become known as the "Tappan bleaching" process. Its merits are now being tested.

BORAX WORKS.

Another industry which promises well for California is the distillation and concentration of borax. The recent revision of the tariff has given additional protection to this branch of our local products, and under the beneficent influence of this change, there have been formed quite a number of new companies, nearly all of which are now engaged in active operations. Hitherto the difficulty has been that the borax fields were generally found in remote places, thus adding to the cost of concentration that of carriage to market, thereby often increasing its first cost by one hundred per cent. But the extension of railroads is slowly remedying this defect, and as the demand for California borax increases, new fields will become opened and available. The business has always been on a fairly paying basis, and being well controlled, will no doubt remain so. It is, however, capable of great extension.

WOOLEN GOODS.

One of the earlier industrial enterprises in this State was the manufacture of wool into blankets, cloth, etc. The industry has met with varying fortunes, and if not always as profitable as might be desired, it has generally yielded a balance on the right side of the ledger. California has always been a producer of choice wool which ranked high in the markets and of which but a very small portion was manufactured into goods at home, the greater quantity going east. It is true that during late years there has been a steady decrease in the quantity of wool raised in this State, there being a steady decrease in the number of sheep pastured. But the quality of the wool has changed but very little, and for certain purposes it is as much in demand as ever and at prices which are relatively as high as ever. The wool industry is, however, affected by a cause over which the State Legislature has no control—that is the tariff, the recent change in which in regard to wool is claimed to affect the American wool grown adversely. It is a national question to which this bureau has not been able to give much attention and which it will not attempt to discuss on that account. It is mentioned here only because it is given as the cause of the depressed condition of the wool market all over the United States during the greater part of 1883 and 1884, and which affected California wool growers and manufacturers quite as much as those of other States. In fact it is claimed that the woolen mills have had a hard road to travel during the past year especially, and that an overstocked market and low prices have left little encouragement to the growth of the industry. Fortunately, the quality of California made woolen goods has always been as high as their reputation, and for this reason they have managed to retain their own market, that our woolen mills have suffered less from the depression than those of other States. Nevertheless it has been sufficient to prevent any decided extension of the industry. For instance, the town of Gridley made active preparations to establish a woolen mill, until upon a canvass of the situation it was found to be a risky undertaking at this time. The idea has been temporarily abandoned. A number of Napa capitalists also agitated the question of a woolen mill, and less conservative than the Gridleyites they have gone ahead and invested in a one-set mill. In addition the Petaluma woolen mill has also started up again and is reported to be fairly prosperous.

There are some peculiarities connected with the California woolen business. One is, that our people prefer eastern goods, full of shoddy, but of brighter patterns, to the homelier but more durable and serviceable patterns. Consequently, the local mills find little encouragement to fabricate worsted and cassimeres, and restrict themselves chiefly to the manufacture of blankets, which have a national reputation. It has also been suggested that if some of our mills would manufacture the wool now going east in its raw state, into yarn, the latter would find a market as readily as the wool itself, and yield a greater profit; but so far no one has thought well enough of this advice to give it a trial. Neither has an attempt ever been made to manufacture carpets, although all who have studied that question agree that, barring the difficulty of getting new and fashionable designs at a place so far away from where fashion makes its decrees, there is no country which is more advantageously situated than California for the purposes of carpet manufacture, the wools of several other countries being at our disposal, and within easy reach for this purpose.

FLOURING MILLS.

No business has changed more completely and few have been extended more widely in the past few years. As a wheat-growing State, the flouring interest is one of importance to California. Hitherto we have been content to raise the cereal and ship it out of the country on English bottoms, and in foreign made sacks. The business was almost entirely in the hands of foreign merchants, who made the local wheat market depend upon that of Europe, and whose first and greatest care was to see the ship owner well protected. It is so yet to a very great extent, although momentarily the field is not as inviting for foreign vessels as it has been. But it is owing chiefly to the high rates of freight demanded by ships, that flouring mills have multiplied and that old established ones have been enlarged, and it is equally true that the present depressed condition of the ocean freight market is responsible for the setback under which this industry is now suffering. For when ocean freight was high, thus keeping wheat values low, our millers being able to purchase their wheat cheap, could place upon the markets of Utah, Colorado, Arizona, and other Western States generally supplied by Chicago and St. Louis, flour at a much cheaper rate than the millers of those cities. When, however, the freight situation here became reversed, and freights went down to nominal rates while the price of wheat went up, this inland trade was lost again, and it is this loss from which the milling business has been suffering somewhat during the past year and a half. However, high freight rates encouraged also the foreign flour trade. The reduction of wheat into flour bringing also a reduction of bulk by one third, the saving on freight was sufficient to make up the enhanced cost of local milling. Consequently, much more flour was exported to Europe than ever before; and as the business paid, our millers made preparations to supply the demand. Nearly all the larger mills in the State adopted new processes of manufacture, and several new mills were created, while others were extended and enlarged. The capital invested in the business nearly doubled within three years, and it has now become so well established that ordinary periods of depression and dullness cannot affect it materially.

It is desirable for many reasons that the grain which California grows should be manufactured into flour before it leaves the State, all of which are too obvious to need to be pointed out here. The business is capable of much greater extension than it has yet attained, for probably but one tenth of the annual yield of wheat is converted into flour at home. The bringing about of this extension must be left to individual enterprise.

BEET SUGAR.

One subject which has engaged the attention of the thoughtful to a great degree is the beet sugar industry, which has found a limited foothold in this State. There is one refinery for beet sugar at Alvarado, and it is mainly at the suggestion of its owners that a number of farmers have undertaken the cultivation of the sugar beet. There is also another mill at Isleton, on the Sacramento River. The enterprise was the more commendable as the growing of the plants in many cases was in the nature of experiment only, the matter of the proper soil and cultivation having to be carefully studied. Then, also, the crystallization of the price of beets grown in strange soil and under new conditions presented many difficulties which had to be removed. However, they were all overcome, and it may now be unhesitatingly announced that the beet sugar industry is a financial and economical success that promises largely to add to the resources and the wealth of the State. Experience has shown that beet sugar can compete successfully with protected Hawaiian Island sugar even when the latter reached the lowest market value which it has ever been known to attain.

Closely allied to beet sugar is the sorghum industry. I am not aware that any attempts have been made in this State to grow the vegetable. Experiments in other States were successful for the first time in 1882, the difficulty up to that time being the impossibility of polarizing the saccharine matter. Our State Board of Horticulture looks with favor upon the introduction of sorghum culture, and I know of no reason why I should not join my recommendation to theirs. It can only assist in driving out of the market the sugar produced by coolie and serf labor on the Hawaiian Islands.

FLINT GLASS WORKS.

I will conclude this brief review of recent industrial development with alluding to the latest addition to the list of enterprises successfully established in this State, the flint glass works, erected by the San Francisco and Pacific Glass Works in this city. The commoner kinds of glassware, such as bottles, etc., have been manufactured in this State for some years, but all finer goods had to be imported from the East. The enterprising business man who determined to make our State independent in this respect also brought twenty-six skilled mechanics to California and erected his works. It is a pleasing fact to add that his venture has proved successful, and that although at this writing the works have been in operation but a few weeks, the doubt of financial success seems to have been already dispelled. The new works are capable of turning out all kinds of flint glassware, useful as well as ornamental.

CHAPTER IV.

DESCRIPTIVELY THE STATE BY COUNTIES.

In the present chapter will be found a comprehensive description of the State, considered by counties. In every case the area, geographical and topographical features, agricultural condition and possibilities, products and means of inter-communication, will be found clearly presented, the information afforded being that obtained from the most reliable sources. To the resident such information is always interesting, while to the intending settler it should be particularly valuable and instructive.

It will be observed that the counties are not arranged alphabetically, but are grouped according to the great natural divisions of the State. These natural divisions are the great valley region, including the level plains, watered by both the Sacramento and San Joaquin Rivers; the lower foothill region, that is the rolling lands of the Sierra Nevada and Northern Coast Range; the mountainous region of the Sierras; the Coast Range region north of San Pablo Bay; the Coast Range region south of San Pablo Bay; and finally, the southern and desert regions.

GREAT VALLEY REGION,

Embraces the following counties and parts of counties: Butte, Tehama*, Colusa, Yuba, Placer*, Sutter, Yolo, Solano, Sacramento, San Joaquin, Contra Costa*, Stanislaus, Merced, Fresno, Tulare, and Kern.

BUTTE.

Area, 1,720 square miles. Sacramento Valley, 595 square miles (treeless adobe lands, 70 square miles); lower foothills, 965 square miles; higher foothills, 160 square miles.

Butte County is separated in part from Colusa on the west by the Sacramento River and Butte Creek; these streams receiving the drainage from the western half of the county. Very near the heads of these small tributaries, and flowing in a general south but irregular course, is Feather River, whose tributaries are all on the eastern side. The surface of the county thus has the general appearance of two successive plains, both sloping westward; the one on the east, or the foothills, is broken and rolling, and has Feather River at its foot; the second, or the plains proper, rises rather abruptly from this river, and slopes gradually and with a more even surface to the Sacramento River on the west. A large part of the latter plain, forming a belt from 12 to 20 miles wide along the Sacramento River and through the country, is quite level, and is embraced in the great valley region. It is the chief farming portion of the county. Its surface is treeless, and its lands vary from the rich sandy loam of the rivers to the stiff black and gray adobe, which is underlaid by limy hardpan, at depths of from one to several feet. A large adobe tract lies between the railroad and the alluvial lands of the Sacramento River, and is liable to overflow in wet seasons. These lands are said to yield an average of 30 bushels of wheat or 45 bushels of barley per acre. The adobe lands are bordered on the east by a light reddish loam, which is considered an excellent fruit and wheat land, and at some points bear an oak growth.

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*In the lists of counties placed at the head of each group the names of those described *elsewhere* are marked with an asterisk (*); and the reference to the head under which they are described will be found in its place in the order of the list in the text itself.

The line separating the valley from the foothills is said to be well defined, the surface of the latter being not only undulating and broken but barren and stony, with an abundance of bowlders. This line passes about 3 miles east of Chico, and a short distance west of Oroville, into Yuba County on the south. A belt of red land lies near the foothills. The lands of the foothills region are generally of a red and gravelly clay character, destitute of trees, and on the hills are barren. The valley soils are better adapted to farming purposes. There is a belt of 8 or 9 miles in width, within the western portion of the foothills region, in which the soil is thin and apparently derived from eruptive rocks. This belt in some places has an elevation of 1,000 feet above the plain.

The northeastern and eastern parts of the county are broken with ridges and hills between the creeks, and are well timbered with pine, cedar, and spruce. Turpentine and resin are obtained from the pine forests. The county is comparatively well populated and under cultivation, the average being 10.8 persons and 177.1 acres per square mile.

The Oregon division of the Central Pacific Railroad connects the county with Sacramento on the south.

TEHAMA.

(See "Lower Foothills Region.")

COLUSA.

Area, 2,500 square miles. Sacramento Valley, 1,275 square miles (including adobe, 100 square miles; tule land, 140 square miles); lower foothills, 580 square miles; Coast Range, 645 square miles.

Colusa County lies in the western part of the great Sacramento Valley, the Sacramento River, in part, forming its eastern boundary. Its western boundary line lies upon the summit of the Coast Range. The western third of the county is hilly, broken, and partly mountainous, and the general surface, falling eastward to the level valley lands of the Sacramento, is interspersed with narrow valleys along the many small streams that flow eastward; Stony Creek, the largest of these streams, flowing northward and northeastward until it escapes from the foothills, when it turns eastward toward the Sacramento. That portion of the great valley north of Jacinto has a gradual fall to the Sacramento River, and its lands are chiefly a reddish gravelly loam, quite similar to that of the foothills. The rest of the valley, or the part south of Jacinto, has a gradual fall to what is termed the basin, or "trough," a low, trough-like depression, partly of tule lands, lying 3 or 4 miles west of the river, and receives the waters of the western streams. From the basin to the river there is a rapid rise, and eastward of the river a fall to another basin or depression of Butte Creek; so that the river has the appearance of flowing along the summit of a low ridge. The lands of this river section between the basins comprise the rich alluvial loams that in other counties southward form so prominent a feature of the valley, and have a natural timber growth of cottonwood, sycamore, and ash.

The tule lands along the sloughs in this county are estimated to cover about 30,000 acres, and are excellent meadow lands. They are low, flat, and ill-drained, and are generally regarded as unproductive or irreclaimable, though crops of grain and cotton have been raised on them after proper drainage and protection by levees from the overflow of the river and other streams. The high land between Sycamore and Dry Sloughs is called Mormon Basin, and embraces rich lands, which yield about 50 bushels of wheat per acre.

The great valley (which includes also the tule and river lands) is a broad, level plain, open and almost entirely destitute of trees, and to the foothills has a width west of the river varying from 15 to 20 miles. The soil is chiefly a loam or sediment from the hills; that from one mile north of Willows to the Tehama County line being reddish and gravelly in character. These valley lands are largely in cultivation, and yield large crops of wheat, the principal crop of the county. Much alkali land occurs in spots in the region lying between the two tule land belts east and southeast of Williams. The small streams have shallow valleys, with silty or sandy alluvial soils, and are separated from each other by low ridges of brownish-gray adobe, which is often humpy or hog-wallow in character, and has more or less alkali in the depressions. These are called "goose lands." W. S. Green, of Colusa, says of this land: All the creeks that run from the foothills in Winter run on ridges. Between these ridges we sometimes have low flat land, with imperfect drainage, so that the water chills the soil; and as it goes off by evaporation, it leaves all the salts near the surface, and when entirely dry, it is more or less incrusted with alkali. In Winter there are ponds on this land around which the geese congregate, and as it was considered worthless for anything else, it was called "goose land." It is now found, however, that drainage and cultivation improve this land, and a great deal of what was called "goose land" now produces good crops.

The foothills which lie between the valley and the mountains, and become more and more broken westward, are partly covered with an oak growth and partly with brush, chamisal, and laurel. The hills are chiefly devoted to grazing purposes, and their lower valleys embrace almost the only farms of the region. The low hills, capable of cultivation, are thought to cover about 700 square miles, while the estimated area of the foothill valleys is about 200 square miles. Of the latter, Bear Valley, within 2 miles of the Lake County line, has a width of from 1 to 2 miles, and a length of 10 miles, its elevation above the plains being about 1,000 feet. There are some wheat farms in the eastern part of this valley, but the western portion is hardly under cultivation.

The upper part of Cortina Valley also is rough and unproductive, while the lower, near the plains, is of a better character, and is partly under cultivation.

Indian Valley, in the northwestern part of the county, has a length north and south of about 30 miles and a width of 5 miles on the north, but becomes very narrow on the south.

The soil of the foothills is red and gravelly, more or less rocky, and is especially adapted to fruits. The mountains of the Coast Range are too high for farming purposes. Pine is their chief timber growth.

The lands of Colusa under cultivation average 26.12 acres per square mile, the county ranking as ninth in the State in this regard. The average of population is but 5.2 persons per square mile. The California Pacific Railroad connects the county with San Francisco and Sacramento.

YUBA.

Area, 700 square miles. Sacramento Valley, 285 square miles; lower foothills, 415 square miles.

Yuba is a comparatively small county, and lies on the eastern side of the Sacramento Valley, reaching from Feather River northeastward to the foot of the high Sierra. Its extreme western part, bounded on the south by Bear River, is intersected by Yuba River, and is largely included in the great Sacramento Valley. The country embraced in the angles formed by the junction of these two streams with Feather River, the western boundary, is very level, and is intersected with small streams or sloughs. Along the rivers the lands, though formerly much above high water, are subject to overflow, the mining debris from the hills having in late years so filled up the channels as to cause the waters to spread out over the adjoining bottoms at every slight rise. These lands, once the richest in the county, are now so covered with this debris, or slickens, as to be "only a swamp of willows, cottonwood, and vines; a waste where bars of white sand and pools of slimy water glisten through the saplings. At high water the thick and muddy waters of the river are spread out over a wide region of level country, sometimes a mile or even three miles wide, once the richest farming lands of the region, but now deserted, leveed in, and covered with mountain mud, sand, and pebbles." Marysville is now surrounded by levees so high as to preclude a view of the surrounding country, giving it the appearance of a walled city of the Old World.

The great valley in this county passes about ten miles east of Marysville, and southeast to the corner of the county. Its surface is quite level and treeless, with its soil well adapted to the culture of small grain, and is the chief farming portion of the county.

The foothills region, which reaches from the valley eastward nearly, if not quite, to the county limits, is at first rolling, but becomes more and more hilly, brushy, and rocky as the Sierra mountains are approached. Small valleys occur among the hills, but the lands are as yet but little under cultivation. The soils of the foothills are red and pebbly clays, and in the lower portions are well adapted to fruits and grapes. The northeastern part of the county is rugged and broken. The farming portion of Yuba County is estimated to embrace not more than one third of the total area, the remainder being devoted to grazing and mining purposes.

The lands of the county under cultivation average 158.3 acres per square mile, while the population has an average of but 16.1 persons.

The Oregon Division of the Central Pacific Railroad connects the county with Sacramento on the south.

PLACER.

(See "Lower Foothills Region.")

SUTTER.

Area, 580 square miles. Sacramento Valley, 530 square miles (including tule lands and some adobe); buttes, 50 square miles.

Sutter County, bounded on the west by the Sacramento River and on the east in part by Feather River, lies entirely within the eastern part of the great valley of that river, its eastern boundary line not reaching even the foothill region of the Sierra mountains. Between the two rivers, with the exception of Butte Slough, in the southeastern part of the county, there are no streams, the country being apparently without drainage. Bear River and several creeks flow westward, but disappear before reaching the rivers.

The surface of the country is very level, the only exception being a region in the northwest having a diameter of about 12 miles, in which appear a number of high, prominent, and craggy isolated peaks, or buttes, of basaltic rock, rising more than a thousand feet above the open plains, whose northern sides only are covered with a scrubby growth of oaks and pine. The border of this region consists of low, rolling foothills, whose lands are mostly devoted to pasturage. On the north and east are meadow lands, embracing, it is thought, about 10,000 acres, naturally subject to overflow, but largely reclaimed; while on the south and west there are marshes and tules, which extend southward in a belt several miles wide, nearly bordering the Sacramento River, through the length of the county. The drainage of these hills is through Butte Slough, at their southern foot, which also, in time of high water, connects the Sacramento and Feather Rivers. The immediate river lands of both the Sacramento and Feather Rivers are alluvial loams, timbered with a growth of cottonwood and sycamore, which, with the exception of some scattering oaks on the plains, is the only timber of the county.

The lands of the Sacramento River are highly productive, and largely under cultivation, as are also those of other smaller streams, while in the case of Bear and Feather Rivers the originally rich alluvial lands on each side of the river for a width of 1½ miles have been to a great extent covered with a slickens deposit of two or more feet.

The lands of the rest of the county are mostly dark loams, with some red gravelly clays on higher spots, yielding in their original condition an average of 25 bushels of wheat per acre. Stiff adobe tracts extend both north and south for some distance from the foot of the buttes, and occur in the low grounds south of Yuba City, and along the tules, and are said to yield from 30 to 40 bushels of wheat per acre.

The lands of Sutter County under cultivation average 296.3 acres per square mile, the county ranking fifth in the State; the average population is 8.8 persons per square mile. The Oregon Division of the Central Pacific Railroad runs through the county to Sacramento, on the south. The Sacramento River is also navigable for boats from Marysville southward, and furnishes transportation facilities to Sacramento and San Francisco.

YOLO.

Area, 940 square miles. Sacramento Valley, 610 square miles (including tule land, 250 square miles); lower foothills, 170 square miles; Coast Range mountains, 160 square miles.

Yolo County is bounded on the east by the Sacramento River, and on the south in part by Putah Creek, which rises in the hills of the Coast Range. Its surface is drained by but few streams, and of these Cache Creek, in the middle, is the most important. This creek enters the county from Clear Lake, on the northwest, flows eastward through narrow cañons for 12 or 15 miles, thence southeast through the broad Capay Valley to Langville, whence it turns eastward through the more level lands and plains to the tule lands, and disappears before reaching the river. Water for irrigating purposes is supplied from this creek by ditches to a large region of farms on either side.

From the Sacramento River westward across the tule and the level plains the surface of the country rises to the lower hills of the Coast Range, which appear abruptly along the western border, rising to about 1,500 feet above the sea. The county thus possesses the soil varieties usual to the country lying between the Sierra and the Coast Range mountains.

The tule lands in the eastern part of the county, with a width of from 5 to 10 miles, are separated from the river by a narrow belt of bottom lands having originally a rich alluvial soil, but now covered with a thick deposit of mining debris, brought down from the foothills. A part of this belt is known as Grand Island. The timber growth of both this and the bottom land of Cache Creek is chiefly cottonwood, sycamore, and willow.

Westward from the tule lands the surface for many miles is very level, comprising a part of the great plain, with its very deep and rich alluvial loam, and is mostly under cultivation in grain and fruits. The central part of this region, from a short distance south of Woodland for several miles to the north and west, is timbered with wide-spreading oaks, while the rest of the plains, and even of the county, is comparatively treeless. In the northern part of the county the plain is limited on the west by a line of low hills, lying about 3 miles west of the railroad, and reaching from the northern boundary south to Cache Creek, the extreme southern point appearing on the south of the creek about 4 miles from Woodland, and covering there an area of 2 or 3 square miles. This belt is 3 or 4 miles wide and is all well adapted to cultivation, the soil being a dark gravelly loam interspersed with tracts of red land. It is not timbered and to the northward, in Colusa County, it flattens out, and has a gravelly soil, with a stunted growth of white oak and chamisal.

On the west of the belt is what has been termed a hollow, or Fairview Valley, some 2 or 3 miles wide, reaching south to within a mile of Cache Creek, and embracing fine wheat lands. This valley is separated from Capay Valley on the west by the low Coast Range mountains.

The country south of Cache Creek is mostly a level and treeless plain (excepting around Woodland), and its soils are dark loams, nearly all under cultivation. A belt of adobe lands, somewhat lower than the plains, reaches from Madison, near the foothills, eastward within one and a half miles of Cache Creek and 8 miles south of Woodland; "it has a width of a little more than a mile, and forms a drainage sink from the cañons of the mountains to Willow Slough."

The county has an average population of 12.5 persons per square mile, while the lands under cultivation comprise 46.3 per cent of the area and average 296.6 acres per square mile, thus placing the county fourth in rank in the State, and but very little ahead of Solano and Sutter. It is one of the raisin-making centers of the State.

The county is connected with Sacramento and San Francisco by railroad.

SOLANO.

Area, 940 square miles. Sacramento Valley, 625 square miles (including tule land, 205 square miles); Coast Range mountains, 315 square miles.

Solano County forms the southwestern end of the Sacramento portion of the great valley, which occupies the eastern part of the county. The western boundary lies in part along the Coast Range, whence the surface gradually slopes eastward, southward, and southwestward.

Putah Creek forms the northern, and Sacramento River the southeastern boundary, while within the county there are but few creeks of any importance.

The county embraces tule lands along the bay and streams, a level and open treeless valley over its eastern part, and a rolling foothill region over the western, the latter including rounded and prominent hills with intermediate valley of rich clay soils. The hills and valleys are treeless, and very little timber is found anywhere in the county. The lands have been classified by the county tax assessor as follows: First class, agricultural lands for fruit, 50,000 acres; second class, for grain, 250,000 acres; third class, reclaimed swamp and overflowed lands, 200,000 acres; fourth class, partially reclaimed swamp and adjacent uplands having an alkali soil, 75,000 acres; fifth class, swamp and overflowed lands, and high and unproductive mountain ranges, the remainder.

One of the most prominent agricultural features of the county is what is known as the "Vacaville fruit region," reaching from Vacaville north to Putah Creek, and embracing Vacaville and Pleasant Valleys and the adjoining foothills, its length being about 12 miles, and its width from 1 to 3 miles. Vacaville Valley slopes from the hills in a south and southeast course, while Pleasant Valley slopes northward, each opening out into the Sacramento plain. A part of the region is in what is known as the thermal belt of the Coast Range, a location of a few hundred feet above the Sacramento plains, and above frost limits. The southern part of the region is cut off from Suisun Bay on the south by the Montezuma Hills, a succession of low, rounded hills, which extend eastward beyond the railroad. They have chiefly an adobe soil, partly under cultivation in wheat. There is some adobe land around Vacaville, but otherwise the soils of the belt are a dark loam.

Green Valley, north of Benicia, is about 11 miles long and 5 miles wide, and is bordered southward by high rolling uplands, which at some points fall off steeply into Suisun and San Pablo Bays. Mare Island, the site of the United States Navy Yard, is opposite the thriving town of Vallejo, and is separated from the mainland by Napa Slough. Its southern end presents a bold and rockly headland, projecting into the bay, and falling off gradually to the northward into a broad expanse of tule lands. The valley lands around Vallejo are partly adobe, while those of the adjoining hills are dark sandy loams; light colored calcareous clays underlie some of the lands.

The foothills of the county are partly covered with a scattered growth of oaks, horse-chestnuts, buckeyes, etc., and where not too steep or broken are partly under cultivation.

The lands of the Sacramento Valley, or eastern portion of the county, are the dark loams, often adobe in character, belonging to the higher portions of the great valley. These lands are almost treeless and very level, and are cut occasionally by arroyos or ravines. The greater part is under fence and cultivation, the chief crop being small grain. The lands of Putah Creek valley embrace *low* and *middle* lands of rather stiff loam soils, and *highlands*, lighter in character, and two or three feet above the latter. The average population of the county is 19.6 persons, and that of lands under cultivation 296.3 acres, per square mile. In the latter regard the county ranks as fifth in the State, and this average is the same as that of Sutter, and but three tenths of an acre below that of Yolo.

Transportation facilities to San Francisco and Sacramento are afforded the county by the California Pacific and Northern Railroad, which passes through from east to west, and by a branch road from Elmira to Vacaville and Winters on the north. Ships also can reach Benicia and Vallejo through the bay and receive their cargoes of grain direct from the warehouse at these points.

SACRAMENTO.

Area, 1,000 square miles. Sacramento Valley, 935 square miles (including tule land, 245 square miles); lower foothills, 65 square miles.

Sacramento County is bounded on the west by the river of the same name, and on the south in part by the Mokelumne River, and lies almost entirely within the great valley.

The American and Cosumnes Rivers are the two other most important streams of the county. These rivers rise among the mountains of the adjoining eastern counties, and flow southwestward, the former to the Sacramento River at Sacramento City, and the latter to the Mokelumne River on the south. Several creeks are tributary to these streams.

The county includes on the extreme east a belt of foothills from 6 to 8 miles wide, Folsom being on its western limit; but otherwise the surface has only gentle undulations, and is watered by streams flowing into the marshes of the tule lands, through which the waters reach the Sacramento River by many channels. "The main Sacramento River (also separating as it flows south into diverse branches or sloughs, some of which are very intricate), runs across the broad tule bottoms in crooked channels, cutting them up into numerous small and several large islands." Along the border of this river there is a belt of alluvial land varying in width from one half mile to a mile or more, originally timbered with cottonwood and sycamore, which is almost entirely under cultivation.

A lower region or belt of tule lands borders this on the east, which is quite narrow in the northern half of the county, but expands to a width of fifteen miles on the south. Portions of these lands have been reclaimed or protected from the overflow to which they are subject and are under cultivation, but the greater part is used as pasture land; thence eastward the surface gradually rises to the foothills, from whose spurs diverge broad low ridges of reddish loam soil, gravelly near the hills, alternating with swales, having a soil somewhat heavier and less deeply tinted, these undulations being perceptible far into the plain. When fresh, the lands of this plain produce thirty bushels of wheat per acre; they are, however, chiefly devoted to fruit culture.

Southeast of Sacramento, the red lands are underlaid by a porous and soft material at from two to six feet, and this by an impervious clay. The belt of foothills is rolling, interspersed with low hills, and its soils are red and gravelly clays, having a scattering growth of oaks. A few mountain spurs from the Sierras enter the county.

The lands of the county under cultivation average 304.6 acres per square mile, a number exceeded only by San Joaquin County. From the City of Sacramento railroads reach east, west, north, and south, and the river is navigated by steamers both above and below.

SAN JOAQUIN.

Area, 1,360 square miles. Great valley, 1,210 square miles (including adobe, 310 square miles, and tule land, 320 square miles); lower foothills, 50 square miles; Coast Range mountains, 100 square miles.

The eastern portion of San Joaquin County lies in the foothills of the Sierra, while the extreme southwestern part rests upon the Coast Range mountains, the central and greater area being thus included in the great valley of the San Joaquin River, which stream flows northwestward, the Sacramento River forming the northwest boundary of the county. Other large streams, such as the Mokelumne, Calaveras, and Stanislaus Rivers, all flowing westward, drain the eastern part of the county, and several streams occur on the west. The surface of the country, with the exception of the two extremes mentioned, is quite level, and is dotted over with a scattering growth of white and a few live oaks as far south as French Camp Slough, beyond which there is but an open plain from the San Joaquin River eastward for 15 miles. The larger streams are mostly lined with a growth of cottonwood, willows, and sycamore.

This county, situated as it is at the point where the Sacramento and San Joaquin plains unite, or rather at the foot of each plain and in the center of the great valley, naturally possesses a variety in its agricultural features. The lands of each valley are to some extent represented, and we find on the west, along the rivers, a broad region of tule lands and marshes, on the east the foothill belt, extending through the county, while in the broad valley plain the alluvial loams of the Sacramento Valley reach southward nearly to Calaveras River, and the sandy lands of the San Joaquin Valley extend northward as far as French Camp Slough, the two being separated by a broad belt of black loam and adobe lands reaching from the foothills westward to the tule lands.

Tule Lands.—West of Stockton to the county line, and from a point some 15 miles south to the northwest corner, there is an immense tract of tule lands (estimated at 200,000 acres), through which the San Joaquin and Sacramento Rivers find their way in many channels to their junction and to Suisun Bay. Numerous islands occur in this region, but are subject to overflow from the rivers; they have rich soils, and when properly leveed are under cultivation. Roberts Island, with its area of about 67,000 acres, is the largest. Eastward the tules are not so low, and by a system of levees they have been largely reclaimed and are under cultivation.

The Valley Lands.—A strip of sandy alkali lands, with a width in places of about 1½ miles, borders the tules on the east. It is covered with salt grass and a scattering willow growth.

The northern part of the valley, from the county line south to within two miles of Calaveras River, has a sandy loam soil, quite deep, and is watered by Mokelumne River, whose wide bottom land is timbered with willows, sycamores, and oaks. The surface of the country is very level, gradually rising eastward to the foothills, and is dotted over with a growth of white and some live oaks. This growth is said to have been originally very dense, but the entire country is now under fence and has been cleared. As the foothills are approached, the lands become darker and richer, and form a plateau some fifteen or twenty feet above the river bottoms. The western part of this sandy loam country is the great watermelon region of the State, but small grain is produced abundantly. The eastern portion has been but recently furnished with transportation facilities by the building of the San Joaquin and Nevada Railroad.

The central portion of the valley, as has already been stated, is a black loam or adobe region, and forms the divide between the two great valley regions, reaching from the foothills westward to the tule lands of the rivers. Its surface is very level, dotted over with scattered white oak trees, is almost entirely under fence, and is largely under cultivation.

The northern limit of the adobe region lies 2 miles north of Calaveras River, eastward to the foothills; the southern limit is along French Camp Slough for several miles, and thence southeast to Farmington and Oakdale in Stanislaus County. The western part of the region has a width of about 10 miles, in the middle of which is the City of Stockton. The adobe soil is said to be from 5 to 10 feet deep, and is interspersed with tracts of a light loam, which yield about 30 bushels of wheat per acre. A strip of alkali land reaches from the border of the tules, near Stockton, northeastward to the Calaveras River, a distance of about 14 miles. Its width is from 1 to 2 miles, though within this belt it occurs only in spots or small tracts a few inches below the general level of the adobe lands, often covered with salt grass and entirely unproductive.

The southern part of the valley, or that portion lying south of French Camp Slough and west from the San Joaquin River to the black lands of Farmington, is level, sandy, and treeless, mostly unproductive unless irrigated, and is the extreme northern representative of the similar lands of the San Joaquin plains of the counties south. On the west of the river, to the Coast Range, and south of the tules, these sandy lands also occur, interspersed with much black adobe, and from lack of irrigation facilities are also uncultivated.

The *foothills* form a narrow belt within this county along the eastern boundary, the change being so gradual from the valley proper into the undulations that are first observed that the line of separation is with difficulty defined. Clements, Bellota, and Farmington are, however, near this line, which thus makes a curve eastward, and after passing Farmington, turns again southeastward into Stanislaus County. Its surface is rolling and mostly broken, its hills partly covered with trees and brush, and have red, gravelly soils; the valleys are mostly treeless, except along some of the creeks, and have soils varying from dark or light loams to red gravelly lands. Beds of rounded bowlders often fill the beds of the creeks. In the southern part of the region the red lands seem to predominate. This foothill region is but little under cultivation.

The county is comparatively well settled, the average being 17.9 persons per square mile, while in the percentage of lands under cultivation (52.8) it ranks highest in the State, with an average of 338.4 acres per square mile. Wheat and barley are the chief crops, and transportation is afforded by the Southern Pacific Railroad to San Francisco and Sacramento, as well as across the continent to the Atlantic States.

CONTRA COSTA.

(See "Coast Range Region, South of San Pablo Bay.")

STANISLAUS.

Area, 1,420 square miles. San Joaquin Valley, 925 square miles (including adobe, 100 square miles, and tule land, some); lower foothills, 140 square miles; Coast Range mountains, 355 square miles.

Stanislaus County lies across the valley of the San Joaquin, its eastern border being among the foothills of the Sierra, and its western resting on the summit of the Coast Range mountains.

The great valley, which thus occupies the central portion of the county, has a width of about 35 miles. On its western side the San Joaquin River flows northwestward, being joined on the east by the Tuolumne River, occupying the central part of the county, and by Stanislaus River, which forms in part the northern boundary, both having their sources among the mountains of the east. The western slope is drained by several creeks. The San Joaquin River is bordered by a belt of tule lands from 1 to 2 miles wide, while the adjoining lands, for a distance of from 1 to 5 miles on the east, have adobe valley soils, more or less interspersed with alkali soils and salt grass. The bottom land of the Tuolumne River is very sandy, while that of the Stanislaus is a dark and firm loam, bearing a luxuriant growth of grapevines among the oaks. This bottom is about 300 yards wide. The plains are very level and without timber growth, except narrow belts of cottonwood and oak along some of the large streams, whose bottom lands are generally quite narrow. The lands of the central part are sandy, especially south of the Tuolumne River, passing northward as well as westward into gray or blackish loams, from which there is a gradual transition to the heavier adobe soils of the immediate valley of the San Joaquin River, into which the plains fall off with a gentle slope and change to a brown sandy loam, sometimes with a deep orange-red subsoil, as they approach the foothills of the east. Oakdale is situated about 80 feet above the bed of Stanislaus River, in the northeastern part of the county, and in a region of black lands, which extend southward half way to La Grange. The lands are not uniform in character, but are interspersed with tracts of red soils, and the depressions often contain cobble-stones. The last half of this foothill border region is undulating, and the soils are more generally a reddish loam.

The foothills of the Sierra extend but a few miles into this county, forming a narrow belt along the east, the soil of which is mostly a red clay, except on the north of Stanislaus River, or in the northeastern part of the county, where the lands are dark loams, with some adobe. An inferior pine growth is found in some places. The foothills of the Coast Range, on the west, are rolling and broken, and have a width of several miles. The soil is mostly sandy and is under cultivation to some extent in the valleys.

The mountains of the Coast Range rise to an elevation of over 2,000 feet, and are rough and much broken.

The crops of the county are chiefly wheat, barley, oats, and corn; the fruits comprise oranges, lemons, limes, pomegranates, olives, peaches, apples, pears, and almonds. Grapes and peanuts are also raised. The average yield of wheat is 15 bushels per acre when Winter-sown.

The county is not thickly settled, the average being but 6.1 persons per square mile. More than 45 per cent of its lands are, however, under cultivation, the average being 294 acres per square mile, thus placing the county seventh in the State in rank as a farming region. It claims to be the banner county for wheat production. The Southern Pacific Railroad passes through the central part of the county from northwest to southeast, and affords transportation to San Francisco and Sacramento, or to the Atlantic States.

MERCED.

Area, 2,280 square miles. San Joaquin Valley, 1,740 square miles (including adobe, 320 square miles); lower foothills, 20 square miles; Coast Range mountains, 520 square miles.

Merced County, with its eastern border lying along the edge of the foothills and its western on the Coast Range of mountains, is divided into two parts by the San Joaquin River, which flows nearly centrally through it in a northwest course, and to which the surface of the country slopes from either side. The chief stream of the county—besides the San Joaquin—is the Merced River, which, rising among the high Sierra, flows through Yosemite Valley and the foothills of Mariposa County, and westward across the plains of this county, in a valley bordered by high banks for the greater part of the distance, to the San Joaquin River. Dry Creek is one of its few tributaries. Bear Creek, on which the county seat is located, rises among the foothills of Mariposa County, and in its western course across the valley, flows between high banks for a large part of the distance. On the south of this stream are Mariposa and Chowchilla Rivers, the latter forming the southern boundary line. Besides these there are numerous creeks and sloughs, all flowing westward and disappearing in the plains before reaching the San Joaquin River. Similarly, in the western part of the county, there are numerous creeks tributary directly to the San Joaquin that have their source in the Coast Range, but are of no special importance, only reaching the river in time of flood.

The San Joaquin River, in its course through this county, is bordered by a belt of tule lands reaching from the southern boundary northward nearly to the mouth of Merced River, and having a width of several miles, though lying almost entirely on the west side of the river. The surface of the entire county—except along the large streams, which are bordered by a growth of oak—is treeless and presents great variety in its agricultural features. Immediately eastward of the San Joaquin River, there is a region of drifting white sand, reaching from the Stanislaus County line on the north, southward, nearly to Bear Creek, and eastward beyond the railroad, to the point where Dry Creek unites with Merced River, while still eastward along the river the soil changes to a sandy loam more or less gravelly.

The lands of the sand region are level, or rather rolling, the soil usually very deep, and has a vegetation of alfilerilla, some clover and tar weed, and occasionally some rattle weed. Wheat is chiefly cultivated, the yield being from 10 to 15 bushels per acre in ordinary seasons.

The lands of Bear River, from the foothills to its mouth, are chocolate-colored clays, more or less adobe in character, while southward to Mariposa River black adobe and hog-wallow lands prevail, and contain some alkali in that portion of the region partly covered with sand, which extends from the railroad westward to San Joaquin River. This region is a level plain to the very foothills. South of Mariposa River the lands of what is known as the Chowchilla region, embracing that creek and the sloughs that are connected with it, are sandy, and, in places, of such a character as to be called "sand mush." They are also largely alkali and hog-wallow in character, especially around Plainsburg and westward, where they are best suited to pasturage. Clover and alfilerilla (except on the alkali soils, where the salt-grass occurs), comprise the vegetation.

In the northeastern part of the county, and east of the sand region first mentioned, the country is rolling and partly hilly, the Black Rascal hills being embraced in a belt of black adobe, hog-wallow, and gravelly lands, reaching from Stanislaus County, a little southeastward, to Mariposa River, south of Bear Creek, its continuity broken by the sandy border lands of the two rivers. Its width east and west is from 1 to 2½ miles. The hills are from 100 to 200 feet in height, and are capped with about 25 feet of red gravelly clays, while on their sides and in the valley are the adobe lands, in whose swales, as well as in the creeks, there are cobble-stones.

This belt passes about 6 miles northeast of Merced, the county seat. To the eastward of the belt, and south of Merced River, the valley lands are red and gravelly to the foothills.

The Merced River Valley, which at Hopeton is about 4 miles wide, is bordered on the south by a line of hills some 50 or 60 feet above it, which extends westward, gradually falling in elevation, nearly to the railroad at Cressy. The adobe lands mentioned occupy the landward slope of these hills, and are found to be underlaid by a whitish fissured claystone, sandy and ferruginous, easily cut, and used for building low walls. The lands of this river valley are a sandy loam, interspersed with underground gravel ridges, which in many places spoil the lands for farming purposes. The soil of Dry Creek is light and reddish, very deep, and yields 25 or 30 bushels of wheat per acre. The uplands north of Merced River are sandy and in part more gravelly than on the south, and will yield from 20 to 25 bushels of wheat per acre. Merced Falls is at the border of the foothill region, and here, as well as northward, are found partly metamorphosed slates standing almost vertically on edge. The foothills are sparsely covered with an oak growth, and their soils are chiefly red, gravelly, rocky, and rather stiff.

The crops of the county are chiefly wheat and other small grain.

Cotton is planted in the Merced River Valley quite extensively, and grows from 3 to 4 feet high, yielding an average of 1,200 pounds of seed cotton per acre, 100 pounds of which make 30 pounds of lint. The crop is irrigated once, usually in June; a later time would cause much new growth, while another irrigation causes the plant to run too much to weed.

The Robla Canal, carrying water from Bear Creek, is 12 miles long, and is said to have a capacity of 120 cubic feet per second.

The Farmers' Canal takes water from Merced River, 3 miles below Merced Falls; thence, its route lies along a rolling sidehill, through a tunnel 4,000 feet long, a distance of six miles to Canal Creek.

The bed of this creek carries the water for 13 miles further, and thence it is distributed principally on the plains between the river and the town of Merced.

The lands of the county are largely under cultivation, the general average being 121.7 acres per square mile, the county ranking thirteenth in the State in this regard.

The Southern Pacific Railroad passes through the valley region of this county from north to south.

FRESNO.

Area, 8,000 square miles. San Joaquin Valley, 3,520 square miles (including tule land, 250 square miles); lower foothills, 500 square miles; higher foothills and mountains, 3,060 square miles; Coast Range, 920 square miles.

Fresno, one of the three large counties that embrace the upper portion of the San Joaquin plains, reaches from the Sierra mountains westward across the plains to the summit of the Coast Range, the elevation on each side being, respectively, above 10,000 feet on the east, and about 3,000 feet on the west above the plains.

The plains extend westward to the foot of the mountains on the extreme border of the county, and are separated from the Sierra on the east by a broad region of foothills.

The lowest portion of the county is in the central part of the plains, from southeast to northwest, and embrace a belt of tule lands, marshes, and sloughs, extending from the border of Tulare County, on the southeast, to the point where the San Joaquin River makes its northwestward bend, and thence becomes the central feature of the valley. This river is the largest stream in the county. It rises among the mountains and foothills of the east, and flows in a westward course to the middle of the plains, thence turns northwestward towards the Sacramento Valley, and has along its immediate border a timber growth of cottonwood, sycamore, willow, and large oaks.

King's River, emerging from the cañons about 40 miles eastward from Fresno, flows in an irregular course southwestward, and traverses a region of undulating plains, until to the northward of Tulare Lake it enters the Mussel Slough region, described under the head of Tulare County. Ordinarily the waters of King's River, not diverted by the numerous irrigation ditches, enter Tulare Lake, but in times of high water they pass partially through Fresno Slough into the San Joaquin River. A number of creeks, rising in the foothills on either side of the valley, flow out upon the plains, but disappear before reaching the river. Numerous sloughs also occur.

The eastern part of the county is extremely rugged, the western face of the Sierra Nevada Mountains, as well as the higher foothills, being cut by tremendous chasms, through which flow King's, Fresno, and San Joaquin Rivers, and their tributaries. Some of the highest peaks rise to an altitude of more than 14,000 feet. An abundance of timber is found on the western slope of this mountain region, two large bodies of redwood being reported on the northeast and southeast. At the head of Fresno River there is a heavy growth of sugar and yellow pine, fir, big tree, and white cedar, with white ash in other places. The mountains of the west are partially timbered with oak and scrub-pine.

The foothills are rolling and broken, 20 or 30 miles in width, covered with scattered oaks, and are interspersed with high and prominent peaks and ridges. The narrow valleys of the streams alone are suitable for cultivation.

The plains possess a variety of lands. The greater portion, however, is a sandy loam, with no timber growth, and requires irrigation to be productive. On the western side of the river the plain slopes gradually from the Coast Range to the slough, and much of its land, even with irrigation, is said to be too poor and sandy for farming purposes. Along Fresno Slough, for several miles in extent, there is much alkali land. Much of the valley land is of an ashen character in color. The plains, with a whitish calcareous loam soil, extend eastward from the river to the railroad, beyond which the surface of the country rises a few feet to a slightly undulating plateau reaching to the foothills. This plateau is destitute of trees, and is traversed by low sandy ridges, which lie between the creeks, and from 15 to 20 feet above the level tracts adjoining the streams, or what may properly be called the general level of the plateau. These level lands have a brownish or reddish sandy loam soil, produced by the more or less admixture of the red foothill clays, and nearer the streams it is stiff enough to be locally designated as adobe. The ridges in the vicinity of King's River contain much white quartz gravel. The plateau region reaches from the San Joaquin River, near the railroad crossing, southward to 1 mile southwest of Fresno, and thence east to King's River.

On the west of the San Joaquin River the plains reach 20 miles to the foothills of the Coast Range, which forms a belt about 10 miles wide "of low hills, covered only with grass; thence to the summit the hills are more abrupt, covered with scrubby oak, and in many places with a dense growth of chaparral."

There are a number of colonies located within from 2 to 6 miles of Fresno City, and all of them are engaged in agricultural pursuits, and have their schools, churches, and social and literary societies. The county is sparsely settled, the average being but a little more than one person per square mile, while the lands under cultivation average 36.3 acres per square mile.

The crops of the county embrace chiefly wheat, barley, corn, oats, potatoes, and alfalfa; but there are numerous orchards and vineyards in successful cultivation.

Cotton has been grown, with an excellent yield, but the cost of production and the small demand makes it rather unprofitable. The Southern Pacific Railroad passes through the county from San Francisco on the north to the Atlantic States on the southeast.

From the great bend of the San Joaquin River two canals have been constructed, the Chowchilla and the San Joaquin and King's

River. The Chowchilla Canal has a length of about 30 miles, and lies on the east of the river, crossing in its course northward Cottonwood and Bereoda Sloughs, and the Fresno, Mariposa, and Chowchilla Creeks. Its capacity may be taken at from 200 to 250 cubic feet per second.

The San Joaquin and King's River Canal, lying on the west side of the river, reaches to Orostimba Creek, a distance of 67 miles, being longer than that of any other irrigating canal in the State. It commands an area of about 283,000 acres, which includes all the lands lying between it and the river, 130,000 acres of which are low, and naturally subject to overflow in seasons of ordinary flood. Its capacity is about 600 cubic feet per second. Another small canal, from the Fresno River on the south side, is used upon land within 9 miles of the headgates. Don Palos and Temple Sloughs have also been converted into canals by deepening and enlarging their channels.

In the southern part of this county there are a number of canals and ditches taking water from Fresno River. The King's River and Fresno Canal, from near the foothills, has a length of 22 miles, and supplies water to the scattered farms on the high plains north and east of the town of Fresno.

The Fresno Canal and the Irrigation Company's Canal takes water a mile below the head of the last canal, and conducts it to the immediate neighborhood of the town of Fresno. Its total length, with branches, is 63 miles.

The Centerville and Kingsburg Canal, 26 miles long, conducts water to Kingsburg. Besides these, there are several other smaller ditches and canals reaching to different parts of this county.

TULARE.

Area, 5,610 square miles. San Joaquin Valley, 1,775 square miles (tules, 30 square miles); lower foothills, 390 square miles; higher foothills and Sierra mountains, 3,245 square miles; Coast Range mountains, 200 square miles.

Tulare County, in common with the other two great counties of the San Joaquin Valley, embraces within its area high Sierra mountains on the east, which are 10,000 feet or more above the sea, a small region of low Coast Range mountains on the west, and a broad and low valley and foothills region between the two mountain ranges. A prominent feature of the county is Tulare Lake, a large body of water, 33 miles long and 22 miles wide, lying on the western side of the valley and having a somewhat alkaline water. This lake receives the drainage waters from the entire county, though many of the streams break up into sloughs and reach it through numerous channels. The chief of these streams are White, Yule, Kaweah, and King's Rivers. The creeks and sloughs are many in number and lie almost exclusively on the east.

The *mountainous region* covers more than one third of the county area and some of the peaks are the highest in the State, Mount Whitney being the highest on the Pacific Coast (15,000 feet).

The foothill region lying at the foot of the Sierra has a width varying from 9 to 12 miles. The surface is much broken with high and isolated hills and ridges, interspersed with many small valleys, which furnish the only lands suitable for farming purposes. Their soil is red, clayey, and gravelly. The lands of the *valley* are quite level and mostly destitute of trees. Visalia, the county seat, is situated in the Kaweah delta, a region of oaks, which extend half way to Goshen on the west, 15 or 20 miles southwestward, and several miles northeastward. The soils of the valley vary from a light sandy loam to a light adobe, and a large tract of highly productive, dark alluvial loam occurs in the Mussel Slough region, north of the lake, and reaches eastward from within one mile of King's River to Cross Creek, 6 miles from the Southern Pacific Railroad. Tule lands, sometimes of large extent, occur on the borders of the lake and along the various streams and sloughs. The lands of the county are too dry to be successfully cultivated without irrigation and ditches have been dug many miles long, from the larger streams, to furnish the necessary water. The chief crops are wheat, barley, corn, potatoes, and hay, but fruits, comprising apples, pears, peaches, and grapes are also raised. Lemons and oranges are grown in the foothills. Cotton, also, has been successfully produced in the country, the Matagorda variety doing best, and there seems to be little doubt that, with a demand for the staple and the erection of gins and mills, the crop would be made profitable.

Water has been obtained in artesian wells, near Tulare, at a depth of 295 feet, the flow being about 100,000 gallons in 24 hours and having a temperature of 70° F. Another well, at a depth of 330 feet, furnished nearly double that amount of water, and many more of similar yield have lately been obtained. This county is more thickly settled than Fresno, the average being two persons per square mile for the county at large. The lands under cultivation have an average of 35.7 acres per square mile, and are chiefly planted in wheat, barley, alfalfa, etc., the chief areas of production being the country around Visalia and the Mussel Slough country.

The Southern Pacific Railroad passes through the central part of the county, connecting with San Francisco on the north, and with the Atlantic States on the southeast. A branch road extends westward from Visalia and to the Mussel Slough region on King's River.

From King's River there are six canals that take water below the crossing of the railroad and conduct it to the Mussel Slough country, their total length, with main branches, being 116 miles. There are also a number of small farm ditches, in the same region, taking water in the channels north. The region covered is about 155,000 acres.

KERN.

Area, 8,160 square miles. San Joaquin Valley, 2,590 square miles (tules, 290 square miles); lower foothills, 560 square miles; higher foothills and mountains, 1,955 square miles; desert lands, 2,180 square miles; Coast Range mountains, 875 square miles.

Kern is one of the largest counties in the State, and includes within its boundaries the extreme upper (southern) end of the San Joaquin Valley, as well as parts of the Sierra mountains and Mojave Desert on the southeast and south, and of the Coast Range of mountains on the southwest. The two mountain chains unite on the south, and thus form a high border of from 2,000 to 4,000 feet above the valley on all sides except the north, their spurs often extending far into the plains. The lower ranges and hills on the east and south are generally covered with grasses and shrubbery, and often with oak, pine, and fir trees. The mountain region of the west is said to be valueless for farms; that of the south and east, on the contrary, has numerous high valleys, which are largely under fence and to some extent in successful cultivation.

The Tehachapi Valley, through which the Southern Pacific Railroad passes, is about 12 miles long and 3 miles wide, surrounded by very high mountains, and in it there is a small salt lake. In this valley the yucca first appears, which afterwards becomes so predominant in the Mojave Desert. Cumming's Valley, with a length of 6 and a width of 3 miles, and Bear Valley, 3 miles long and 1 mile wide, nearly adjoin Tehachapi. Abundant timber is said to be easily accessible to all of the mountain valleys.

The valley of the south fork of Kern River, 8 miles north of Havilah, contains about 40 square miles, and is well timbered. The surface of the plains is very level and treeless, and for the most part has a sandy loam soil, which, with proper irrigation, is quite productive. From Bakersfield eastward for 10 miles to the foothills and cañons of Kern River there is a strip of undulating country elevated above the valley proper and having a sandy loam soil. From Bakersfield southward a belt of tule marshes reaches the Kern and Buena Vista Lakes (themselves now little else than marshes, connected by a slough 100 feet wide), and thence northward to Tulare Lake, forming the outlet, in part, for the waters of Kern River. The lakes are gradually disappearing by evaporation, because of the shutting off of their water supply by irrigating canals. The waters are strongly charged with alkali, and are totally unfit for use.

Kern River Slough reaches from the north of Bakersfield westward toward the marshes, and forms, as it were, a "cut-off," the country thus included between it and the old channel and the marshes of the east, south, and west being a delta region of rich sandy loam, originally having a willow and cottonwood growth, and embracing the chief farming lands of the county, known as "Kern Island." Previous to 1875, this delta region, with the rest of the county, was considered almost worthless agriculturally, and was almost entirely uncultivated; but by means of an extensive system of irrigating canals, Messrs. Haggin, Carr, and Livermore have shown that the lands are highly productive, and large ranches of thousands of acres each are now under cultivation on this island. Irrigation is, however, absolutely necessary, and a network of ditches and canals from 2 to 20 miles or more long and from 20 to 150 feet wide, has been constructed, bringing the waters of Kern River into every portion of the county and carrying cultivation far into the plains. The following summary of irrigating canals is taken from the State Engineer's report:

District No. 1, between Old South Fork and Old River. Total area, 80,000 acres; number of canals, 5; aggregate capacity of canals, 895 cubic feet per second.

District No. 2, west of Old River and south of New River. Total area, 64,000 acres; number of canals, 9; aggregate capacity, 348 cubic feet per second.

District No. 3, between New River and Goose Lake Slough. Area, 70,000 acres; number of canals, 11; aggregate capacity, 1,924 cubic feet per second.

District No. 4, swamp lands south of Tulare Lake. Area, 103,000 acres; number of canals, 2; aggregate capacity at head, 3,370 cubic feet per second.

District No. 5, north of Kern River and Goose Lake Slough. Area, 360,000 acres; number of canals, 6; aggregate capacity, 645 cubic feet per second.

Total number of canals and ditches, large and small, 33; total length of main canals and branches, 275 miles. From the Kaweah River there are 16 canals; two carry water to the Mussel Slough region, the others to the region of Visalia.

Many artesian wells have been successfully bored on the north side of the two lakes, water being obtained at depths of from 200 to 300 feet. The artesian belt, as developed by the wells, has a length of about 18 miles and a width of 6 miles.

The principal ranches are the Livermore, about 12 miles south of Bakersfield, and the Belleview Ranch, about 18 miles southwest, along Kern and Buena Vista Lakes, each including about 7,000 acres, and nearly all under cultivation. From Fort Tejon, on the southern extremity of the county, to Kern River, a distance of about 40 miles, along the western border, the county for 10 miles from the Coast Range of mountains is covered with salt marshes and brine and petroleum springs.

The county is sparsely settled, the average being much less than one person (six tenths) per square mile, while the average of lands under cultivation is 7.5 acres per square mile. The crops embrace wheat, barley, corn, etc. Cotton also has been raised successfully, but the want of a market has made its production less remunerative than other crops. Transportation facilities are afforded by the Southern Pacific Railroad, which passes through the county, connecting with San Francisco on the north and the Atlantic States on the southeast.

LOWER FOOTHILLS REGION

(*Of the Sierra Nevada Mountains and the northern Coast Range.*)

(This embraces the following counties and parts of counties: Of the Coast Range foothill counties—Shasta, Tehama, Yolo,* and Colusa;* of the Sierra foothill counties—Shasta, Tehama,* Plumas,* Butte,* Sierra,* Yuba,* Nevada, Placer, El Dorado, a little of Sacramento,* Amador, a little of San Joaquin,* Calaveras, Tuolumne, a little of Stanislaus,* and Merced,* Mariposa, Fresno,* Tulare,* and Kern.*)

SHASTA.

Area, 4,000 square miles. Lower foothills, 1,525 square miles; higher foothills and Sierra mountains, 1,950 square miles; Coast Range mountains, 525 square miles.

Shasta County, situated at the head of the great valley drained by the Sacramento River, is one of the best watered counties in the State. The river has very many confluents, both from the mountains of the Sierra on the east and north, and from the Coast Range on the west, all uniting near the southern border. Chief among these, is Pit River, whose source is in the northeastern corner of the State.

The mountains that cover a large portion of the county on all sides but the south, are rugged and lofty, rising more than 5,000 feet above the sea. On the east there are four peaks of special prominence that stretch far into the county from the Sierras, separated from each other by distances of 10 or 12 miles. Lassen's Peak, the highest of these, having an altitude of 10,577 feet, and timbered for two thirds of the way up, the rest being bald, and usually covered with snow. Other peaks and buttes occur everywhere, and all are of volcanic origin, as shown by extinct craters, cones, sulphur deposits, beds of lava, etc. Hot and boiling springs are also of frequent occurrence. The mountains of the north and west parts of the county are covered with forests of conifers of nearly every variety, except redwood, while on the lower hills, live oak is abundant, and ash occurs along the streams.

The southwestern portion of the county, embracing about one third of its area, is a foothill region having an altitude of not more than 2,000 feet above the sea. Its surface is hilly and broken, and is interspersed with numerous valleys along the several streams.

The tillable lands are chiefly east of the Sacramento River; a broad region, comparatively level, lies between that stream and Stillwater and Cow Creeks, a distance of about 12 miles. The river itself from Redding south to the county line is bordered by a strip of good farming land, dotted over with white oaks, and having but little undergrowth. The soil of these valleys is a reddish sandy loam, more or less gravelly, but near the creeks it is more clayey. The soil of the hills in places is adobe in character, but for the most part it is red and gravelly. Immediately north of Redding are found clumps of manzanita and large oak. Very little farming is done in this county, the chief industry being stock raising. The average of cultivated lands is 13.9 acres per square mile. Redding, the county seat, is connected with Sacramento by the Oregon Division of the Central Pacific Railroad.

TEHAMA.

Area, 3,060 square miles. Sacramento Valley, 265 square miles; lower foothills, 2,000 square miles; higher foothills and Sierra mountains, 420 square miles; Coast Range mountains, 375 square miles.

Tehama County is situated at the northern end of the great valley of the Sacramento River, and reaches from the Sierra, on the east, across this valley to the Coast Range of mountains on the west, with an extreme width, east and west, of 86 miles, and a length, north and south, of about 35 miles. The topography is greatly varied, the Sacramento River forming a central feature, with its very level and open valley of from 7 to 15 miles width, bordered on the east, north, and west by a region of foothills, which extend back, with increasing altitudes, to the foot of the mountains. The valley, foothills, and mountains thus constitute three general divisions in their agricultural features.

> All the streams heading in the Sierra run in deep cañons, which open upon the Sacramento Valley in gate-like chasms, the lava formation through which they flow terminating here with an abrupt edge. Below this is a barren treeless belt covered with volcanic fragments, which, gradually sloping to the west, merges in the fertile bottom lands along the river.—[*Natural Wealth of California.*

The *Sacramento Valley* is the most important of these divisions, comprising, as it does, the chief grain-producing part of the county. The valley proper has its head a short distance above Red Bluff, on the river, on both sides of which it extends southward in a belt of a few miles width through the county, widening out rapidly to the westward below the county line. Along the immediate banks of the river there is a narrow strip of bottom loam, very rich and productive, whose original growth was cottonwood and sycamore, but the soil of the valley proper is a reddish loam, with no timber, the surface presenting a broad and open prairie plain.

The *foothills* are rolling, treeless, and usually much broken; but they are interspersed with narrow valleys, watered by streams flowing into the Sacramento River. The hills are generally too rocky and barren for the culture of grain, but are thought to be suitable for grapes. The soil is chiefly a red gravelly and rocky loam, or clay. Near the foot of the mountains stock raising is almost the only pursuit.

The *mountains* are too high and barren for agricultural purposes. Those of the Sierra are generally timbered with spruce and pine, and covered with snow for most of the year; those of the Coast Range are lower in altitude, and have a growth of inferior pine and oak. Lumbering is the chief industry in the mountains.

Wheat is the chief crop of the county, though fruits, grapes, etc., are now receiving more attention. The lands of the county under cultivation average 88.3 acres per square mile, the average of population being but 3 persons per square mile.

The agricultural or valley region is supplied with transportation facilities by the California Pacific and Central Pacific Railroads, which pass through, west and east of the river, via Willows and Sacramento, to San Francisco.

YOLO.

(See "Great Valley Region.")

COLUSA.

(See "Great Valley Region.")

PLUMAS.

(See "Sierra Mountain and Higher Foothills Region."

BUTTE.

(See "Great Valley Region.")

SIERRA.

(See "Sierra Mountain and Higher Foothills Region.")

YUBA.

(See "Great Valley Region.")

NEVADA.

Area, 990 square miles. Lower foothills, 440 square miles; higher foothills and Sierra mountains, 550 square miles.

Nevada, a long and narrow county, extending from the State line westward across the high Sierra, and southwestward into the foothills, is watered chiefly by South and Middle Yuba Rivers, and Elk Creek on the north, while Bear River marks the southern boundary, all flowing west toward the Sacramento River.

Several small lakes occur among the mountains of the east, the largest being Donner Lake, 2 miles from Truckee. The greater part of the county on the east is rugged, wild, and uninhabited (the mountains, in places, rising more than 8,000 feet above the sea), and is almost exclusively devoted to mining operations.

The western part, or less than half the county area, lies within the foothill region, and embraces the lands suitable for farming purposes. Its extreme altitude is not over 2,000 feet. Near the mountains its surface is very broken and hilly, the low spurs of the Sierra reaching far westward and forming a region "diversified with deep ravines, knolls, and dales, rolling prairies, wooded mountains, and gently sloping hills. It has a mixed growth of oak and pines, occurring in clumps, and an undergrowth of buckeye, chamisal, wild lilac, and manzanita." Lumbering is the chief industry among the forests of pine, spruce, fir, sugar pine, and cedar. The extreme western part of the county is less broken, and the lands more in cultivation. The soils of the uplands comprise red loams, more or less generally, or gray sandy granitic lands; those of the bottoms and flats are often dark alluvial loams.

The county averages 2.1 persons per square mile. The cultivated lands average 25.6 acres per square mile for the county at large, or about 5.7 acres for the foothill and valley region.

The Nevada Central Railroad connects with the Central Pacific at Colfax, the latter road also traversing the eastern part of the county.

PLACER.

Area, 1,480 square miles. Sacramento Valley, 220 square miles; lower foothills, 450 square miles; higher foothills and Sierra mountains, 810 square miles.

Placer, one of the narrow counties that extend from the State line westward to the Sacramento Valley, has Bear River for a part of its northern, and the North and Middle Forks of the American River for the greater part of its southern boundary.

A number of other large creeks, either tributary to the latter river or flowing independently toward the Sacramento, aid in supplying an abundance of water for mining or irrigating purposes. The forks of the American River flow through deep cañons and narrow gorges, which are from 1,800 to 2,000 feet below the general level of the country. Lake Tahoe covers a large surface on the high Sierra region on the east.

The county is naturally divided into the following general regions:

1. The *high Sierra mountain region*, on the east, rising from 7,000 to 10,000 feet above the sea, and embracing a wild and rugged country, subject to heavy snow and landslides, well timbered with pine, fir, and cedar, and but little inhabited.
2. An *upper foothill region*, from 2,000 to 4,000 feet, extending westward to near Auburn, and embracing a broken and very hilly country, well timbered, and devoted chiefly to lumbering and mining.
3. A *lower foothill region* of less than 2,000 feet altitude, embracing a region of rolling lands and low hills, somewhat broken in character, and partly timbered with white, live, and black oaks, Sabin's pine, buckeye, manzanita, and chaparral. These hills are devoted chiefly to fruit culture, and the valleys to hay and alfalfa. That part of the region reaching from two miles west of Auburn to the higher hills has chiefly red gravelly lands, while the remainder is granite in character, and its soils are lighter and partly sandy. Both are well adapted to fruits. Granite bowlders and outcrops are abundant. This granite belt extends through the county north and south, with an average width of about ten miles.
4. The *Sacramento plain*, with an elevation of about 40 feet above the sea, and embracing a level or slightly undulating country, with

swales or depressions, and almost treeless, except along the watercourses, where a few oaks vary the monotony.

The line dividing the plains from the foothill region passes from Folsom (Sacramento County) to Rocklin, and thence eastward of Lincoln and Sheridan to Bear River, on the north.

The soil of the valley or plains is a red loam, with a stiff clay subsoil, underlaid by a yellowish hardpan; within the swales or depressions the stiff clay appears as an adobe, the county greatly resembling that of Sacramento. The lands under cultivation average 68.8 acres per square mile for the county at large, or about 152 acres for that part outside of the mountainous portion.

The Central Pacific Railroad, with its Placerville branch, affords the western part of the county abundant transportation facilities, also passing near the northern border of the eastern or mountainous country.

EL DORADO.

Area, 1,800 square miles. Lower foothills, 780 square miles; higher foothills and mountains, 1,020 square miles.

El Dorado County reaches from the State line westward almost to the level plains of the great valley, and is watered by the American and Cosumnes Rivers and their many tributaries. The former rising in the east flows centrally through the county with a channel far below the general level of the country through which it passes. Lake Tahoe extends into the county on the northeast, while several smaller lakes occur within this mountainous region.

The eastern part of the county, reaching westward to within 10 or 12 miles of Placerville, is high, mountainous, and rugged, embracing the high Sierra, which rises to an altitude of 8,000 feet and more. The western slope of this mountain region is heavily timbered, and lumbering is the chief industry.

The rest of the county, embracing a belt about 30 miles wide, is a region of foothills, and contains a scattered growth of white and black oak and pine, except in the extreme west, which is mostly destitute of timber. From its elevation of about 2,000 feet on the east the surface of the foothills falls westward to the plains, hilly and broken at first, but becoming more level, and embraces the only farming lands of the county. Many small valleys occur in the eastern foothills region, but they are said to have suffered very greatly by the washing away of their soils by placer mining. The lands of the county are chiefly red gravelly loams and clays, and, along the streams, strips of alluvial loams. The cultivated lands average for the county at large 18.8 acres per square mile, while the average of population is not quite 6 persons.

The Sacramento and Placerville Railroad runs from Sacramento to Shingle Springs, 10 miles from Placerville.

SACRAMENTO.

(See "Great Valley Region.")

AMADOR.

Area, 540 square miles. Sierra mountains and upper foothills, 90 square miles; lower foothills, 450 square miles.

Amador County is very narrow, and lies east and west between the foot of the high Sierra and the Sacramento plains, being bounded on the north in part by a fork of the Cosumnes River, and on the south by the Mokelumne River. Numerous creeks, flowing independently of these rivers westward towards the Sacramento, aid in supplying the county with an abundance of water.

The eastern portion is very narrow, and for a distance of 25 or 30 miles is embraced within the upper foothills region, having an elevation of from 2,000 to 4,000 feet above the sea. Its surface is rugged and broken (the streams finding their way through deep cañons) and well timbered. The rest of the country, or lower foothills region, is hilly and partly timbered, and interspersed with numerous fertile valleys, varying in length from 3 to 6 miles, and in width from 2 to 3 miles. Ione and Jackson Valleys are each 12 or 15 miles long, and from 2 to 5 miles wide. The soils are red loam, more or less gravelly, with a scattered growth of oaks. The chief crops are wheat, barley, potatoes, and fruits. Irrigation is necessary, and water is brought in ditches from the large streams.

The largest of these, the Amador Canal, is connected with the north fork of the Mokelumne River, and has a length of 60 miles. The lands yield from 20 to 30 bushels of wheat and 25 bushels of barley per acre.

The western part of the county is connected with Sacramento and San Francisco by the Amador branch from Ione City to Galt, and thence by the Central Pacific Railroad.

Lands under cultivation average 68.1 acres per square mile for the county at large, or about 81 acres for the foothills region.

CALAVERAS.

Area, 980 square miles. Lower foothills, 800 square miles; higher foothills, 180 square miles.

Calaveras County is bordered on the north and south respectively by the Mokelumne and Stanislaus Rivers, which, rising not far from each other in the Sierra, rapidly diverge as they flow southwestward and give to the county a triangular shape. These two rivers, with Calaveras River, which rises near the center of the county and flows westward, are the principal streams, and have numerous small tributaries. The surface of the county is hilly and broken throughout, the western boundary resting among the lower foothills near the great valley. The general level rises rapidly to the summit of the high Sierra on the east.

Bear Mountain, a rocky, wooded range, a little more than 2,000 feet high, strikes northerly across the middle of the county from the Stanislaus to the Calaveras River, dividing this central portion into two sections, the lower composed of abrupt foothills, that gradually subside into low rolling prairies as they stretch west toward the great San Joaquin Valley, while the upper grows more rugged and broken as it extends eastward into the main Sierra. * * * The upper and steeper slopes of the foothills are covered with scattered groves of oak, interspersed with an inferior species of pine, buckeye, manzanita, and other shrubby trees. Large patches are covered wholly with the chamisal (*adenostoma*), an evergreen shrub with a delicate leaf, which, seen from afar, gives to the mountains a beautifully dark umbrageous appearance.

One of the greatest curiosities in California consists of the Big Tree Grove, situated on the divide between the middle fork of the Stanislaus and Calaveras Rivérs, about 20 miles east of Mokelumne Hill, and at an elevation of 1,759 feet above the level of the sea. The trees range in height from 150 to 327 feet, and in diameter from 15 to 30 feet.—[*Natural Wealth of California*.

Mining is the chief industry of the county, and comparatively little farming is carried on. The lands under cultivation average but 30 acres per square mile for the county at large, being chiefly embraced in the lower foothills region. Fruits comprise the principal crop. The soils are chiefly the "red foothills," similar to those of Tuolumne County. Numerous canals have been dug from the rivers to convey water for hydraulic mining and other purposes, the two largest of these, the Mokelumne Hill and Seco Canal, on the west, connecting with the Mokelumne River, and the Murphy Canal, in the eastern part of the county, taking its water from the Stanislaus River.

Transportation facilities are afforded the western part of the county by the San Joaquin and Nevada Railroad, which extends westward through San Joaquin County, along the south side of the Mokelumne River, to Brack's Landing, where a line of boats connects with San Francisco; also, by the Stockton and Copperopolis Railroad, reaching from the southwest part of the county west to Stockton, and thence by railroad or boat to San Francisco or Sacramento.

TUOLUMNE.

Area, 1,980 square miles. Lower foothills, 520 square miles; higher foothills and Sierra mountains, 1,460 square miles.

Tuolumne, one of the foothill counties, is separated from Calaveras on the northwest by the North Fork of the Stanislaus River, which, with its tributaries, drains that portion of the country. The greater part of the county is, however, watered by the Tuolumne River and many tributaries that, rising in the Sierra, flow westward, its drainage basin being entirely within the county until the western boundary line is reached. The surface of the country is hilly and broken, rising rapidly from the lower foothills, near the San Joaquin plains, eastward to the high Sierra mountains, 14,000 feet above the sea. The greater part of the county, because of its hilly and broken character and its elevation, is untillable. The lower foothills in the west, where not too broken, are being successfully cultivated in grapes and fruits, while the narrow valleys are planted in alfalfa and grasses for hay. This western region, and especially the valley of the Stanislaus River, has been occupied chiefly with mining camps, quartz mining being a large industry. Lumbering is also carried on extensively in the timber region of the Sierra, "which is located about centrally with reference to the eastern and western boundary line of the county and extends the entire breadth, its area being about 50 miles long and 25 wide." The timber comprises pine, fir, and cedar, and a number of sawmills are located upon the western limit of the region. In the mountainous portion of the county, on the east, there are many lakes at the heads of the tributaries of the Tuolumne River. Lake Elnor, the largest of these, is situated in a valley 4 miles long and averages 1½ miles in width. The land bordering it is a sandy loam, producing a luxuriant growth of native grasses. A portion of the valley is well wooded and the gentle slopes and ridges on both sides are covered with a great growth of pines and firs. Numerous canals have been constructed, mainly for nursery purposes, to carry the waters of the rivers to many points in the county. The Big Oak Flat Canal is some 40 miles long and that of the Tuolumne County Water Company (the "Tuolumne Ditch") about 35 miles.

The cultivated lands average 12 acres per square mile for the county at large, the average population being about 4 persons per square mile. The San Joaquin and Nevada Railroad, when completed, will give the county good transportation facilities. At present communication is by way of the Southern Pacific Railroad, in Stanislaus County.

STANISLAUS.

(See "Great Valley Region.")

MERCED.

(See "Great Valley Region.")

MARIPOSA.

Area, 1,560 square miles. Lower foothills, 530 square miles; higher foothills and Sierra mountains, 1,030 square miles.

Mariposa County reaches eastward from the edge of the San Joaquin plains across the foothills far into the Sierra mountains, its altitude thus varying from about 300 to from 10,000 to 13,000 feet, that of Mount Dana being 13,277 feet. The largest stream of the county is the Merced River, which rises on the extreme east and flows westward to the plain. On the south, Chowchilla River forms part of the boundary between this and Fresno County, while numerous smaller streams flow westward into Merced County. The eastern part is timbered with pine, spruce, and cedar, the central with oak and pine, while the western is sparsely timbered, and the extreme west is almost treeless.

The most prominent point of interest in the county is the celebrated Yosemite Valley, situated on the east at an elevation of 4,060 feet above the sea. The valley proper is about 8 miles long, and from one half to one mile wide, the greatest breadth being 3 miles. The Merced River flows through it, while on either side are very high cliffs, rising in places thousands of feet above the valley. On the lower mountain slopes, and in the valley, are groves of pine, with some oak, willow, and cottonwood. This valley is famous for the grandeur of its mountain scenery and waterfalls, and is under State control as a place of resort for tourists. Its further description lies outside of the province of this report.

The mountainous portion of the county, too high and broken for cultivation, extends westward to within a few miles of Mariposa, the county seat. A region of foothills of from 2,000 to 4,000 feet altitude then crosses the county from northwest to southeast, and reaches westward about 15 miles beyond the county seat and into the southern part of the county. It is hilly and broken, interspersed with prominent mountain chains, and is well timbered with pine and oak, the source of supply for the mining camps of the region. Very little farming is done in this part of the county, except on a small scale in the valleys. The extreme western part is more level, its hills being susceptible of cultivation, and is but sparsely timbered with white and blue oaks. The soil of the hills is mostly a reddish clay, that of the valleys or lower lands being chiefly a dark loam with red subsoil. Some farming is done in this lower foothill region, small grain, fruits, and vegetables, being produced. The county is, however, chiefly engaged in mining, and these supplies are produced mostly for home consumption. Lumbering is also carried on in the higher foothills and mountain region.

The average acreage of tilled lands per square mile of the county at large is but 9.6 acres; but, assuming that the lower foothills embrace nearly all of the lands under cultivation, the average for that region is nearly 30 acres. Merced is the nearest railroad point for transportation facilities.

FRESNO.

(See "Great Valley Region.")

TULARE.

(See "Great Valley Region.")

KERN.

(See "Great Valley Region.")

SOUTHERN AND DESERT REGIONS.

(Embracing the counties of Los Angeles, San Bernardino, and San Diego.)

LOS ANGELES.

Area, 4,750 square miles. Coast Range mountains, 2,305 square miles; valley lands, 1,480 square miles; desert, 965 square miles.

Los Angeles, the most populous of the counties of the southern region, borders the ocean on the south, while its northern boundary lies in the Mojave Desert. A range of high mountains, the San Fernando and Sierra Madre, passes through the county, with a course a little south of east, and an extreme width of about 30 miles, separating the Mojave Desert from the southern region of large valleys and hills, which comprise the inhabited and cultivable portion of the county, and which alone is well watered by numerous streams rising among the mountains and flowing into the ocean. Of these the most important are the Los Angeles River, rising on the northwest in the San Fernando mountains and valley; the San Gabriel, rising on the northeast, and uniting with the former a few miles from the ocean; and the Santa Ana River, which, also rising on the northeast, in the San Gabriel Range, and flowing through San Bernardino County, enters this county from a cañon in the Santa Ana Mountains of the southeast.

The Mojave Desert region, on the north, elevated more than 2,000 feet above the sea, is a desolate sandy plain, without permanent streams of water and little vegetation other than, locally, *yucca* (sagebrush), some creosote plant (*larrea*), and occasionally juniper and scanty grass. Water may be obtained in wells, but the region, because of the high and hot winds, which stunt or prevent the growth of vegetables or crops, save in protected spots and with irrigation, is hardly inhabited. There is said to be some good land, well adapted to fruits and small grain, in the foothills around Lake Elizabeth, on the western border of the desert, but the same causes have thus far prevented their utilization or occupation. There is also a large amount of alkali land in the low grounds of this section.

The mountain region that passes through the county is the continuation of the Coast Range, and is made up of high chains, trend-ing in every direction, and, except in some of the passes, too rough and broken for tillage. The eastern and northern slopes are said to have many rich and fertile cañons, which are well timbered with oaks, but are not under cultivation. The Soledad Pass, through which the Southern Pacific Railroad has been built, trends westward to the Santa Clara River, and its lands are mostly sandy and gravelly, and have a vegetation, comprising in places oak, willow, cottonwood, and sycamore, with alfilerilla, clover, bunch grass, and sage. The adjoining mountains are largely covered with chamisal brush. The agricultural region proper of the county, embracing that part lying between the mountains and the coast, is from 15 to 30 miles wide, and is divided into three large valleys: The San Fernando Valley, on the northwest, separated from the coast and Los Angeles plain by the Santa Monica Mountains; the Los Angeles Valley, which reaches from the Santa Monica Mountains southeast along the coast to the San Diego County line; and the San Gabriel Valley and its eastward continuation into San Bernardino County, separated from the Los Angeles Valley and the coast by the Santa Ana range of mountains. The two latter valleys form what is known as the Los Angeles plain, itself divided into an upper and lower, the latter reaching from the coast inland for 10 or 15 miles. The lands embrace dark and rich loams, black adobes, reddish mesa lands, and belts and tracts of alkali land, the latter occurring chiefly in the lower plain.

The lower plain, along the coast, is the corn-growing region of this part of the State, its moist lands needing no irrigation and producing fine crops. Gospel Swamp, southeast from Westminster, comprising a very low tract on either side of the Santa Ana River, reaches 10 or 12 miles from the mouth, and has a width of 6 or 8 miles. The tract is especially noted, its yield being from 80 to 100 bushels per acre. Here, also, "pumpkins forget to stop growing."

The crops of the county embrace corn, wheat, barley, and rye, while oranges, lemons, olives, figs, grapes, and other fruits, are also grown. Irrigation is, however, generally necessary; and to secure all the advantages possible, farmers have organized themselves into colonies in the several regions, and have constructed ditches from the streams to supply the needed water. The ditches from the Los Angeles River have a total length of 72 miles, and bring water chiefly to the region of the City of Los Angeles.

Two ditches are taken from the San Gabriel River at the point where it leaves the mountains. One of these, the Azusa Ditch, is, with its branches, about 30 miles long, but its supply is limited. The Duarte Ditch is 12 miles long, and its supply is also limited.

From the two branches of the lower portion of the San Gabriel, between the Coast Range and the sea, there are at least twenty-three ditches of more or less importance, the largest of which is the Arroyo, which is 9 miles long. The beds of the streams are so shallow that water is diverted from them without difficulty by means of simple and inexpensive dams of brush and sand.

The Santa Ana River supplies water to two important canals, as well as to a number of small ones. The Anaheim Canal is 8 miles long, but much water is lost in the coarse sandy soil, and its banks are protected against erosion by willow trees. The Cajon Canal heads at Bedrock Cañon in the Coast Range, and follows along the face of the broken hills for 8 miles before reaching the plateau overlooking the valley. Its total length is 14 miles, and 25 miles of main distributing ditches have been constructed. The Santa Ana Canal has a total length of 20.5 miles. At 8 miles from its head it divides, one ditch skirting around the rim of the valley, and the other passing across the valley, through Orange, to Santa Ana.

The average of lands under cultivation for the county at large is 41 acres per square mile; but, on the supposition that nearly all the lands are included in the valleys south of the mountains, we find the average to be about 131 acres per square mile.

The county is connected by the Southern Pacific Railroad with San Francisco on the north, and with the Atlantic and Gulf ports on the southeast. Branch railroads also run south to the coast from the City of Los Angeles, and there connect with the Pacific Coast line of steamers for the north and south.

SAN BERNARDINO.

Area, 23,000 square miles. San Bernardino Mountains, 2,950 square miles; valley, 465 square miles; desert, 19,585 square miles.

San Bernardino is the largest county in the State, and reaches from the eastern State line southwestward to within a few miles of the coast, the Colorado River, forming a part of the eastern boundary, separating it from Arizona. It is chiefly a part of the great Mojave Desert; and the habitable portion of the country is very small, and is included in the southwestern corner, on the coast side of the San Bernardino range of mountains.

Mojave Desert is described as a sandy and barren waste, interspersed with volcanic mountain ridges and peaks, salt lakes, and alkali tracts, destitute of all growth, except yucca, small nut pines, and juniper, and having but one or two streams. The Mojave rises in the San Bernardino Mountains on the south, and flows for about 100 miles out on the desert and suddenly disappears.

The San Bernardino Mountains of the southwest are thickly timbered with pine, cedar, hemlock, and maple, and are high and impassable, except through a few passes. These mountains are separated from the Temescal and Santa Ana range on the southwest by a broad valley, which embraces the only agricultural lands of the county, and is a part of the valley region that covers a large part of Los Angeles County. Santa Ana River, the chief stream of this part of the county, rises in the San Bernardino Mountains, and with many small tributaries, flows southwestward across the valley, and across the Santa Ana Mountains to the ocean. It is timbered with cottonwood and willows. Santa Ana Valley is divided by a chain of buttes into two parts, the northern receiving the name of the county. The San Jacinto Mountains inclose the valley on the east, the chief outlet thus being on the west into the Los Angeles plains and to the coast.

This valley has, until the past few years, been occupied chiefly by stock raisers; at present, however, its agricultural value is being rapidly developed by a system of irrigation by waters from the mountains and from artesian wells, of which a number have been bored. A number of colonies have been established, and large areas have been planted and made to produce large crops of grapes and fruits of many varieties, prominent among which are raisin grapes, oranges, and lemons. The Cucamonga colony, not far from San Bernardino, and the Riverside colony, occupying a plateau on the south of the chain of buttes, are well known for their excellent fruits.

The surface of Santa Ana Valley presents a gently undulating or level plain, gradually rising toward the hills from the river, and in many places is studded with trees. The soil is a reddish gray gravelly loam, rather stiff in the center of the valley, becoming more and more sandy, and in part gravelly, as the hills are approached; but that at Riverside is red and clayey in character and of great depth. The lands are free from stones, and are said to produce, when fresh, as much as 35 bushels of wheat or 50 bushels of corn per acre.

The foothills have a red gravelly soil, and, with the mesa or bench lands, are excellent for fruits. The valley, surrounded as it is by high mountains, is thus partially protected from the hot and parching winds of the desert, except in the early part of the season, when north winds prevail. The dryness of the climate adapts the valley region especially to raisin making, and Cucamonga is noted for its sweet wines.

The lands under cultivation in the county average 55 acres per square mile; but for the county at large the average, if distributed, would be only 1.1 acres per square mile. Barley and wheat are the chief field crops, but vineyards and citrus orchards are being rapidly brought into prominence.

The valley is supplied with many canals and ditches, which take water either from the Santa Ana River or directly from the mountains. Cucamonga and other districts are supplied with ditches of less length from mountain streams.

The Southern Pacific Railroad passes through the San Bernardino Valley, thus connecting their agricultural portion of the county with San Francisco on the one hand and with the Atlantic States on the other.

SAN DIEGO.

Area, 14,600 square miles. Coast Range mountains, with many small valleys, 7,950 square miles; desert, 6,650 square miles.

San Diego, the extreme southern county of the State, reaches from the Pacific Ocean eastward to the Colorado River, and ranks as second in size among the counties. More than one half of its large area is, however, but a barren desert, embracing a portion of the Mojave Desert on the northeast and the Colorado Desert or Coahuila Valley, in the middle, the two being separated by the San Bernardino Range of mountains, which trends northwest and southeast. The Mojave Desert lands are interspersed with abrupt mountain chains, and are mostly above sea level, while the surface of the Colorado Desert is quite level, free from these mountains, except on the border, and is in many places from 100 to 250 feet below the level of the sea. Both are covered with sand-hills, alkali lands, dry lakes, and a sparse desert growth of yucca, cactus, sage, and creosote bushes, and are destitute of water. The winds often blow with great violence, and sand-storms are produced by even moderate winds. This region is uninhabited, except by a few railroad station hands, and therefore is not under cultivation; but on the border of the Colorado Desert there is a little land planted in fruits, vegetables, and alfalfa.

The rest of the county west of the desert is mountainous, broken, or hilly, and is divided into two natural divisions, viz.: the San Jacinto and Coast Range mountainous region and that lying between the Coast Range and the coast, embracing hills, mesa lands, and valleys.

The San Jacinto Mountains, which border the desert, have an altitude of about 5,500 feet. Between them and the Coast Range there is a lower region of valleys and hills or table lands, about 3,000 feet above the sea, which is watered by several streams which flow westward into the ocean. The mountains are timbered with oak, cedar, pine, and fir. This valley region is chiefly devoted to stock raising, and the population is very sparse.

The coast region, embracing a belt of country along the coast about 25 or 30 miles in width, is rather rolling or undulating near the coast, but becomes more and more hilly and broken eastward to the mountains. This region contains nearly all of the population and the chief farming lands of the county. Within this and the mountain region there are said to be more than thirty valleys varying in length from 3 to 15 or 20 miles, and embracing from a few hundred to upward of 20,000 acres. They are well watered by numerous rivers and their tributaries, except during a portion of the Summer months. Their land is a dark loam, that of the hills and uplands being a red loam or clay, underlaid generally by adobe. Comparatively little of the land of this section is under cultivation, the average probably not being as much as 10 acres per square mile. The crops comprise, chiefly, wheat and barley, with grapes, oranges, lemons, and other fruits. San Diego River, in its course among these hills, is bordered by a number of valleys of various extent, Mission Valley, near the mouth of the river, being from one half to one mile wide, its surface having a loose sandy soil, destitute of trees, but with a thick growth of bushes. The sidehills are clayey and gravelly, and are about 100 feet high. Cajon Valley, 15 or 20 miles from San Diego, is about 6 miles long and 4 miles wide, and has the appearance of a great basin or box (as its name indicates) hemmed in by high gently sloping hills, and is level and treeless, except along the river, where there is a growth of cottonwood, willow, and sycamore. The soil, of no great depth, is sandy and gravelly, and is largely cultivated in wheat and other crops. The upper or northern part of the valley is very narrow, and is bounded by lofty hills and covered with a dense growth of willows with some sycamore.

The Southern Pacific Railroad passes through the Colorado Desert in the eastern part of the county, while the western part is connected with it, at Colton, by the California Southern Railroad, which extends from San Diego northward.

The Pacific Coast line of steamers also connects San Diego with San Francisco, the Bay of San Diego, with its port, affording anchorage for the largest vessels.

COAST RANGE REGION.

(South of San Pablo Bay.)

(Embraces the following counties and parts of counties: San Francisco, San Mateo, Contra Costa, Alameda, Stanislaus,* San Joaquin,* Santa Clara, Santa Cruz, Monterey, San Benito, Fresno,* Merced,* San Luis Obispo, Santa Barbara, Kern,* Tulare,* and Ventura.)

SAN FRANCISCO.

Area, 40 square miles. Coast Range mountains or hills, 40 square miles.

San Francisco County, the smallest in the State, and embracing little else than the city and suburbs, is bounded on the west by the ocean and on the east by the Bay of San Francisco, and is separated from the counties on the north by the Golden Gate. Its position is thus near the end of a peninsula, the surface of which is little else than a region of sandhills on the west and rocky ridges on the east, originally covered with a brush growth and rising high above the waters of the bay. Sandstone and serpentine rock formations underlie the hills and outcrop on some of the highest points, as well as at cliffs and bluffs along the shore lines. The county is not an agricultural one and very little of its land is under cultivation except in vegetable and "truck" farms. The even temperature permits the cultivation of temperate zone vegetables throughout the year, while the average is too low for the ripening of fruits. Heavy fogs, brought in by the trade-winds from the ocean, prevail during the Summer months, and on the seaward slope more or less throughout the year. The city is situated on the hills and flats that border the bay on the eastern side of the county, and has a population of 275,000, comprising representatives from almost every nation on the globe. With its extensive wharfage along the bay, its capacious harbor, extending far inland through other connected bays opening out through the Golden Gate upon the great highway to Asia, and affording safe anchorage for the largest vessels, it may be called the metropolis of the West.

SAN MATEO.

Area, 440 square miles. Some redwood; Coast Range mountains, 390 square miles; valleys, 50 square miles.

San Mateo County, bordered on the east by San Francisco Bay, and on the west by the ocean, is mostly mountainous, the north end of the Santa Cruz Range running the entire length, north and south, and having an altitude in some places of 3,000 feet. On the south this range is very steep and rugged, and is covered with redwood, oak, pine, and other timber. The natural growth of the lower hills is chamisal brush, manzanita, poison-oak, hazel, etc. Along the bay shore, on the east, there is a strip of level country, from 1 to 5 miles wide, embracing, it is thought, about 69,000 acres, of which 40,000 are tillable, but a salt marsh, whose extreme width is about 2 miles, forms the immediate border of the bay, in the southern part of the belt. The soil of the plain around Redwood City, the county seat, is an adobe, covering about 3,000 acres, but elsewhere, until the sandhill region is reached, sandy loams prevail, changing to the northward to more sandy soils.

On the ocean shore there is around Halfmoon Bay another belt of comparatively level farming land, about 1 mile wide and 10 miles in length, rising rapidly into the hills and cañons of the interior; also, to the southward, at Pescadero, where, at the mouth of a creek of the same name, there is a valley containing about 4,500 acres of good lands, surrounded on all sides, except the west, by high mountains. Here is the famous pebble beach, where agates, opals, jaspers, carnelians, etc., are found in great abundance. Elsewhere along the coast the hills reach the water's edge, forming high cliffs and bluffs.

Among the mountains and hills there are many small valleys, which, with the adjoining hills, are chiefly used as pasturage for stock and dairy farms, the principal industry of the county.

The average of lands under cultivation for the county at large, in 1880, was 168.1 acres per square mile, or 26.3 per cent of the area. The chief crops are wheat, barley, and oats. Potatoes have been produced extensively, but are very liable to blight. At Pescadero much flax is grown. In this county, as in Santa Clara, portions of the mountain slope are known as "thermal belts," on account of their exemptions from frosts, as well as from the direct inflow of the sea fog.

The county is connected by railroad with San Francisco.

CONTRA COSTA.

Area, 800 square miles. Great valley, 105 square miles; tule, 25 square miles; Coast Range mountains, 625 square miles; valleys, 70 square miles.

Contra Costa County is bounded on the east by the San Joaquin River, and on the north and northwest by Suisun and San Pablo Bays. The chief streams are San Pablo, Pinole, and San Ramon Creeks, the latter being the largest, and giving its name to one of the principal valleys of the county. These streams flow northward into the bays.

The surface of the county is largely mountainous, having the Coast or Contra Costa Range proper on the west, and the Mount Diablo Range in the center and on the east. Mount Diablo itself with its rounded summit, is the highest point in the county (3,896 feet above the sea), and, isolated as it is from other mountains, is the most prominent object. The slopes and higher portions are mainly treeless, and afford fine pasturage, but a forest growth, consisting of a great variety of oaks, covers the ravines of the lower portion, while in the higher, the nut pine, juniper, and a chaparral consisting largely of scrubby oaks, covers large areas.

The mountain is nearly treeless on the north side. San Ramon Valley, which separates the mountain from the Coast Range, reaches from Suisun Bay southward across the county, under different names, into Alameda County, where it connects with Livermore Valley. Between the bay and the foothills of Mount Diablo, a distance of about 15 miles, the valley has a width of about 6 miles, but afterward becomes very narrow, averaging from 1 to 2 miles.

The soil is chiefly a stiff adobe, and in some cases is exceedingly waxy and black. When fresh, this soil yields about 30 bushels of wheat or 40 bushels of barley per acre. A number of large valleys, such as that of Walnut Creek, flanked by rolling sloping land, are connected with this on either side, and are also rich and productive. The lands around Mount Diablo are partly reddish, and more or less gravelly, and partly gray loams. Mount Diablo Valley, which extends from the foot of the mountain 8 or 10 miles northwestward, with a width varying from half a mile to 3 or 4 miles, is very level, and is drained by small streams. Its soils are gravelly loams, with some adobe, and produce fair crops of grain and fruits.

Small valleys are found among the Coast Range mountains, and are usually occupied by dairy and fruit farms; but on the east of the Mount Diablo Range, sloping gently away from its foot toward the river, and reaching north to the bay, there is a large tract of farming land, having a width of from 3 to 6 miles for a distance of 23 miles, which is chiefly given to grain growing. Still eastward of these, and bordering the bay, are large areas of tule lands, covering, it is estimated, about 75,000 acres. Some of these lands have been protected from overflow by levees, and are under cultivation. The tule region is separated from the San Joaquin River by a narrow tertiary ridge running northward from the southern part of the county, and elevated from 30 to 40 feet above tidewater. This ridge has a sandy soil, and affords fine locations for towns.

Within a few miles around the base of Mount Diablo there is a great variation of rainfall. On the west the clouds are apparently caught by the high peaks, with a resulting heavy precipitation, while on the east and south, there is but little rain; *e. g.*, at Antioch, only from 12 to 14 inches. Some of the valleys running westward into the Coast Range are remarkable for their exemption from frost, so that the orange, pomegranate, etc., ripen to perfection.

The lands under cultivation in the county average about 291 acres per square mile, thus placing Contra Costa eighth in the State in this regard. Transportation facilities are afforded both by rail and boat to San Francisco.

ALAMEDA.

Area, 660 square miles. Coast Range Mountains, 415 square miles; valley, 225 square miles; tule lands, 20 square miles.

The County of Alameda lies immediately east of San Francisco Bay, its shore line reaching south from San Pablo Station to the limit of the bay. Thence the county extends eastward to the summit of the Contra Costa Range, and on the south, still eastward, to the Mount Diablo Range, inclosing within its limits the valleys of Livermore, Suñol, Amador, and others. The two mountain ranges are nearly parallel with each other, and rise to altitudes of 2,000 feet or more. They are now treeless on the western and southern slopes (except in the cañons, where there are clumps of oak, laurel, madrone, alder, etc.), though originally having some redwood growth, while on the northern and eastern slopes, besides an abundance of chaparral, there is a scattered growth of both live and white oak, with maple and madrone.

The largest stream of the county is Alameda Creek, which drains Livermore Valley, and, traversing the Coast Range and entering the bay shore, or "Alameda Plains," flows westward to the bay. Its banks are mostly timbered with sycamore and willows. San Antonio and other creeks are tributary to this from the south. Northward from Alameda Creek are San Lorenzo, San Leandro, and other small streams, which have their source in the mountains that bound the Alameda plain and flow westward into the bay. On some of these creeks there is a natural growth of oak, willow, sycamore, laurel, madrone, and buckeye.

Reaching back from the shore with a gradual rise to the hills is a broad and nearly level region, the plain of Alameda. This plain extends through the county, along the bay, with a width averaging about 5 miles, though becoming quite narrow on the north, and is said to have been originally covered with an oak growth; but now there are only a few scattered groves of this timber in addition to the eucalyptus tree, which has been extensively planted in some localities. Nearly, if not all, of the plain is now improved and largely under cultivation in small grain and orchard fruits, including excellent currants; and in the southern part, especially near Mission San José, vines, as well as other fruits, flourish. The creeks coming from the Coast Range are bordered by tracts of light alluvial soil, cultivated by preference in barley and "garden truck," the latter mainly by Portuguese. The bay shore is bordered by tracts of salt-marsh lands, altogether estimated at 35,000 acres, having the usual salt grasses, and penetrated in every direction by lagoons or salt water creeks, which receive the waters of high tides. At some points the bay shore embraces a narrow strip of sandy soil extending along the beach, while inland of this is a level belt of black adobe, or in places, salt marshes.

Toward the hills the lands become more gravelly and lighter colored, and are mingled with bowlders and rock fragments, and there are occasional tracts of adobe lands at the foot, as well as on the hills. The region is thickly populated, and numerous towns and villages dot its surface. Oakland, with its population of 34,555, and situated opposite San Francisco, is connected with it by regular half hourly trains to the end of a long pier or mole (built by the railroad company), and thence by ferry boats. Berkeley and Alameda also enjoy similar facilities for reaching San Francisco.

The mountain range that borders this plain has mostly rounded summits, but is traversed and cut up by numerous cañons, though well covered with grasses, and suited to pasturage and to wheat growing. The hill soils are usually adobe. The hill sides are partly covered with a chaparral of scrub oaks, poison oaks, groundsel tree (*Baccharis*), bramble, etc., with manzanita on the highest points. From Grizzly and Bald Peaks, near Berkeley, probably the highest points in the north part of the range, fine views may be obtained of the Bay and City of San Francisco, the Golden Gate, the mountains of the Coast Range on either side, and the distant Sierra Mission Peak, near Mission San José, is the highest point in the southern part of the county.

The valleys lying between the two ranges of mountains are accessible from the plains by Stockton Pass, a winding ravine leading from the San José Valley to Suñol Valley, the western third of which shows rather abundant and heavy adobe soil of the hills, the slopes being devoid of trees. Eastward the character of the soil changes, becoming of a lighter hue and containing more loam, sand, and gravel, especially in the bottoms. Oak trees occur in some places. The lands of these hills are partly under cultivation, wheat being the chief crop. Suñol Valley, into which the pass opens, is circular in outline, surrounded by hills, and was originally dotted over with oaks. It contains much good farming land. The Vallecitos Valley, separated from Suñol only by a low ridge, is rather narrow, being surrounded by high hills, and its surface is mostly level, interspersed with some hills, and is largely under cultivation.

Livermore Valley, to the eastward of these, is about 14 miles long and from 5 to 8 miles wide, and is surrounded by rolling foothills and mountains. The northern and eastern part of its surface is a plain, the southern and western a region of rolling hills, and all is dotted over with oak trees. It is watered by numerous streams, tributary to Alameda Creek, and along these there is usually a growth of sycamore. The soil of these and of the other valleys that adjoin it is a gravelly loam, very productive, yielding good crops of grain and fruit, among the latter the vine becoming prominent in the upland or hill portion, the level part being too much swept by coast winds for full success.

Amador Valley, on the southeast, is about 8 miles in diameter, and is nearly surrounded by grassy hills, the spurs of the two mountain ranges. Its soil is a sandy loam, and produces good crops of wheat.

The lands of the county under cultivation embrace 47.4 per cent of the total area, and average about 303.5 acres per square mile, the county ranking third in the State, the Counties of San Joaquin and Sacramento alone having a greater average.

STANISLAUS.

(See "Great Valley Region.")

SAN JOAQUIN.

(See "Great Valley Region.")

SANTA CLARA.

Area, 1,400 square miles. Coast Range mountains, 995 square miles; Santa Clara Valley, 405 square miles.

Santa Clara County, with its eastern boundary line upon the Coast Range of mountains, and its western upon the Santa Cruz Range, includes within its limits, mountains, hills, and valleys, which are watered by many small streams flowing partly to the north and emptying into the Bay of San Francisco, and partly south to the Pajaro River, and thence to the Bay of Monterey. The most important of these streams are Guadalupe and Coyote Creeks, on the north.

The mountains on the west are mostly heavily timbered, while the lower hills are covered with grasses, and well suited to pasturage, especially on the west side, where the fogs from the ocean keep the grass green through a great part of the year. The eastern mountains are treeless, save in the cañons. The prominent feature of the county is the Santa Clara Valley, well known for its productiveness and mild climate. With a width of 20 miles on the north, at the southern extremity of San Francisco Bay, the valley reaches southward to about 11 miles south of San José, where it becomes only about 100 yards wide, then opens out to several miles in width, and passes into San Benito County. Its surface is somewhat undulating, with low, rounded hills on the margins, and is dotted with clumps and groves of oak. Its lands embrace black adobes on the northern or lower portions, and lighter, sandy, or gravelly loams on the higher lands. The chief crops are wheat, barley, corn, potatoes, and vegetables, and in the neighborhood of San José, fruit (especially plums, prunes, and grapes), for which culture the climate and exemption from fogs specially adapt the region.

The lands under cultivation average for the county at large 118.7 acres per square mile, the average population being 25 persons per square mile.

Branches of the Southern Pacific Railroad, on either side of the bay, connect San José with San Francisco and Oakland; in addition, the South Pacific Coast Railroad skirts the western shore of the bay.

SANTA CRUZ.

Area, 420 square miles. Redwood lands, 195 square miles; Coast Range mountains, with some valley lands, 255 square miles.

Santa Cruz is one of the most mountainous counties on the southern coast, the ranges, however, being neither high nor much broken. The eastern boundary line rests upon the summit of the Santa Cruz branch of the Coast Range at an elevation of 2,000 feet or more above the sea, extending south to the Pajaro River, while to the west, and separated by the San Lorenzo Valley, is another mountain range reaching southward to the Bay of Monterey at Santa Cruz. Still westward to the coast the country is hilly and broken, often to the water's edge. In the southern part of the county the Pajaro River forms the boundary line, and is bordered by a valley region extending east and west, and embracing rich dark loam and adobe lands, which are well adapted to wheat and barley. This part of the valley, however, is not wide, as the river flows not far from the hills, thus giving the greater part to Monterey County. Northwestward from this there is another valley region lying east of the Town of Santa Cruz, and at the mouth of the San Lorenzo River. It embraces several terraces or benches, which are from a mile to two miles wide, and extend through the valley, the first 30 feet above the level of high water, the second 34 feet higher, and the third 199 feet higher still, showing a total rise of 263 feet. The Town of Santa Cruz is located upon the lowest of these benches, extending southward by Soquel and Aptos to the Salinas marshes. It has been estimated that the bottom lands of the county embrace 40,000, and the terraced plateaus 50,000 acres.

The county is watered by the San Lorenzo and Pajaro Rivers and numerous small streams that flow from the coast mountains to the sea. The mountains are generally heavily timbered almost to their very base with redwood, pine, and chestnut oak, probably to the extent of one third of the county area, while the lower hills are covered to some extent by hazel bushes. The redwood trees of this county are noted for their great size, many of them attaining a height of from 200 to 300 feet, and a diameter of 15 feet. The lands of the San Lorenzo Valley north of Santa Cruz have a sandy loam soil, derived from a fine-grained calcareous sandstone, the prevailing rock of the hills, although granite occurs northward of the Town of Santa Cruz. The soil is deep in the flats, but easily washes away, and on the hills much rock is exposed. This valley is about 20 miles long, and is most generally used for pasturage, though there are a number of vineyards near Vine Hill, about 10 miles north of Santa Cruz. The valley is very narrow, the river often flowing between high hills, while in other places it opens out into wide plateaus; but the hills on either side are sufficiently low for cultivation, and the Santa Cruz Mountains generally are being rapidly occupied for orchards and vineyards. The Town of Santa Cruz is a popular Summer resort by the seaside. The average of lands under cultivation is 95.7 acres per square mile, and the crops embrace wheat, barley, corn, potatoes, and fruits of several kinds; lumbering is also one of the chief industries. The Town of Santa Cruz is one of the great Summer resorts for the people of this coast.

Transportation facilities are abundantly afforded by the vessels of the Pacific Coast Steamship Company that touch at numerous wharves on the coast; also, by the South Pacific Railroad and the Santa Cruz branch of the Southern Pacific Railroad, which passes through the county to San Francisco.

MONTEREY.

Area, 3,520 square miles. Coast Range mountains, 2,420 square miles; Salinas Valley, 700 square miles; other valleys, 400 square miles.

Monterey County is divided into valley and mountain regions by two branches of the Coast Range, which extend northwestward through almost its entire length. The Gabilan Range separates the county from San Benito, while the Santa Lucia Range of almost unbroken lofty mountains extends along the coast, separated from the former range by a broad valley watered by the Salinas River. This river (the most important of this region) rises in San Luis Obispo County and flows northwestward for nearly 200 miles to the Bay of Monterey. The Pajaro, in the northern part of the county, flows westward, also into the bay, but is not a long stream. The Santa Lucia Mountains are, in places, heavily timbered on their lower slopes, and in the cañons, with Monterey pine, cypress, and redwood. The Gabilan Mountains of the east are low and rounded for 18 miles southward from the Pajaro River, and are timbered, but for the next 30 miles, reaching to San Lorenzo, they are high and rough, again sinking to a range of low and rolling hills at the county limit. The range contains much limestone, and among the hills there are a number of small valleys.

The most important agricultural region of the county, although not the largest, is the Pajaro Valley on the northern border, which has a length of about 10 miles, and a width of 6 to 8 miles, extending into Santa Clara County on the east, and Santa Cruz on the north. Its surface is quite level, and embraces three varieties of soils: dark loam land of the plains, well adapted to wheat and barley; adobe lands, comprising one third of the valley or bottoms of Pajaro River, and lying several feet below the plains; and clayey loams, comprising the rest of the river lands, and known as the sugar beet soils. The valley is bounded on either side by a range of smoothly rounded hills, those on the south reaching to within 1 mile of Pajaro Station, and being too steep for cultivation.

The western part of this southern range consists of sandy and untimbered hillocks, while the eastern is more broken, better timbered, and has an abundant growth of white sage. The small valleys or hollows among these hills are mostly swampy, with either willow and tule, and often hold small lakes or ponds of water. This region of hills is several miles in width, and separates Pajaro Valley from that of Salinas River on the south.

The Salinas Valley, traversed by the river of that name, and the largest in the county, reaches from the Bay of Monterey southeastward between the two mountain chains toward San Luis Obispo County for a distance of 90 miles, where it is very narrow and considerably elevated above the sea. The width varies from the first 50 miles from the coast from 12 to 8 miles, gradually rising inland. The valley presents a terraced and almost treeless plain, the only growth being some live oak on the northeast, and sycamores on the streams. Near the upper end of the valley, within the county, are several small valleys, connected with it or separated by narrow and low hills. Long Valley is about 10 miles long and half a mile wide, and is partly cultivated. Its soil is an adobe, covered partly with bunch grass, and the hills bordering it are low, rounded, and treeless, and contain much limestone. Peach Tree Valley, separated from the last by a range of hills some 300 feet high, and timbered with oak and pine, is 22 miles long and three fourths of a mile wide, and has, except over an extent of 5 or 6 miles at the lower end, a scattering growth of white oaks. Its soil is a dark loam, deep and rich. The Coast Range, on the northeast, rises some 1,600 feet above the valley.

The arable land along the coast for about 15 miles south of Carmel Bay is nowhere more than one fourth of a mile wide. Carmel Valley is parallel to and lies west of Salinas Valley, and its lower foothills afford a very good pasturage. Comparatively little of the county is under cultivation, the average being 48 acres per square mile. These lands, however, are mostly confined to Pajaro Valley, and are planted in small grain, potatoes, etc. Experiments have been made with cotton, but after growing about 12 inches high and blooming, the plant suddenly died. The Town of Monterey, on the bay of the same name, is the most popular Summer resort of the coast. A railroad from Soledad and Monterey northward to San Francisco affords transportation facilities to the greater part of the valley portion of the county.

SAN BENITO.

Area, 990 square miles. Coast Range mountains, 875 square miles; valleys, 115 square miles.

San Benito is a long and narrow county. Its northeast and southwest boundary lines lie respectively on the summit of two branches of the Coast Range (viz.: the Gabilan and the inner Coast Range), whence the surface slopes abruptly to the valley of the San Benito River, which flows northwestward through the middle of the county and unites with the Pajaro River. A few small streams, of little importance, are tributary to the San Benito.

The lands suitable for cultivation comprise but a small portion of the county area, and lie chiefly on the northwest, forming the southern end of Santa Clara Valley to Los Pinos, and are drained by the San Benito and Tres Pinos Rivers. This valley land is said to embrace about 25,000 acres of light sandy loam, 34,300 acres of black sandy loam or adobe, the valley land proper, and 46,000 acres of what is termed second-class land, partly sandy loam and partly adobe, lying on the foothills. In addition there is a large amount of hill pasture land. The lower part of this valley, in a "strip reaching from Pajaro River to within 3 miles of Hollister, is a low, flat, wet, partly tule land, with a black soil, used entirely for pasturage."

The valley is from 10 to 12 miles wide below, but a few miles southeast from Hollister it terminates in a kind of rolling benchland, extending across the valley, and known as Poverty Hill or Hollister Valley. This Poverty Hill region is treeless, its elevation being adobe in character, and in the depressions a sandy loam covers the adobe. At about 4 feet depth, the earth is charged with alkali. Still southeastward the valley becomes very narrow and elevated, and to its source it is rarely one half a mile wide, and often but a few rods. It is here very much cut up, and is almost wholly occupied by the San Benito River. A few white oaks in the valley and live oaks near the hills, with occasional groups of cottonwood on the river, comprise the only timber. The soil of the valley is yellowish and silty; that of the hillsides are adobe, and scarcely under cultivation. The hills bordering the valley are but thinly covered with a scrub growth of oaks. Bitter Water Valley, on the south, a continuation of Peach Tree Valley, of Monterey County, is said to be 7 miles long and from three fourths to one mile in width. This valley is treeless, and the hills that border it have a scanty growth of oak. Its soil is a yellowish and stiff clay loam, and is tilled with some difficulty, except when moist.

Dry Lake Valley, or basin, about 4 miles long, has a dark, clayey loam soil, partly timbered on both hills and in the valley with oaks, and is thickly settled.

Santa Ana Valley, lying eastward of Hollister, has an area of about 15 square miles. Its soil is a dark, gravelly loam, underlaid by adobe, and partly covered with scrubby white oak. This valley opens out into San Benito Valley, and, with it, is very generally under cultivation in the cereals, hay, potatoes, etc.

The first class or valley lands of the county are said to yield from 30 to 40 bushels of wheat per acre, the higher or second class lands from 20 to 30, while the rolling hill lands produce from 15 to 20 bushels per acre.

The average of tilled lands for the county at large is 91.5 acres per square mile; but, as already stated, the entire acreage is confined almost exclusively to the northern part of San Benito Valley, where the average is much higher. The Southern Pacific Railroad affords transportation facilities to and from San Francisco.

FRESNO.

(See "Great Valley Region.")

MERCED.

(See "Great Valley Region.")

SAN LUIS OBISPO.

Area, 3,460 square miles. Coast Range mountains, 2,370 square miles; valleys, 1,090 square miles.

San Luis Obispo County is bounded on the south by the Santa Maria River, which flows westward, reaching the ocean through the Guadalupe Lagoon, the eastern boundary lying along the summit of the Coast Range, which borders the great San Joaquin Valley on the west. The county is divided diagonally into two valley regions by the San Lucia Range, which enters on the northwest, passes through and unites with the Coast Range in the southeast corner, and has elevations ranging from 3,000 feet to that of low hills.

The eastern valley region presents a series of low, rolling hills, interspersed with valleys, watered by Salinas River and San Juan Creek and other streams, all of which flow northwestward.

During the Summer months the waters of these streams do not flow continuously in their channels, but rise and sink alternately at short distances. Salinas Valley, the chief valley of the region, is about 9 miles wide, and has an elevation of about 1,000 feet above the sea. The surface rises on the southeast into a level plateau some 300 feet above the valley proper, and soon terminates against the mountains.

Paso Robles, noted for its medicinal springs, is situated in a plain, about ten miles square, in the lower part of the valley, surrounded by a live oak grove. North of this locality there is but little timber, either in the valley or on the hills, except southward, where the hills are timbered with considerable oak, and, near the mountains, with pine. Manzanita is also abundant in many localities, and chamisal occurs on the hills north of Paso Robles. The soil along the streams is mostly a dark loam covered with alfilerilla and burr clover; that of the uplands is generally a stiff clayey loam, more or less gravelly, easily tilled, interspersed with some adobe tracts, and is covered with alfilerilla, burr clover, bunch-grass, and wild oats, the latter chiefly on the higher hills. There is some loam land on the Santa Margarita and San José, lying contiguous to the Santa Lucia Mountains, while the lands of the Salinas plains are red in color. The valley of Estrella Creek is rolling and partly timbered with very scattering scrub oaks. Its soil is a dark gravelly loam, with some adobe.

The lands of the higher plateau of the southeast, or Carisa plains, are very level, bounded on either side by high and abrupt mountains, and have mostly adobe lands, covered with grasses and devoted to grazing purposes. The entire eastern valley is chiefly a sheep and cattle range, though cereals are successfully grown near the foot of the Santa Lucia Mountains, and "fruit trees have done well in some cases, and the grape thrives to an extraordinary degree."

The coast valleys on the west of the Santa Lucia Mountains are narrow on the north, but toward the south widen out to many miles, and are rolling and interspersed with many high ridges and hills. The San Luis Obispo plain has an elevation of about 150 feet above the sea. The Osos, Laguna, and Chorro Valleys run parallel with each other as far south as what is known as the Mission lands, around the City of San Luis Obispo.

Thence the Corral de Piedra Valley continues south until it intersects the valley of the Arroyo Grande. Beyond this is the Nipomo (more properly an elevated plain) and that portion of the Santa Maria Valley situated on the right bank of the Santa Maria or Cuyamas River, which forms the southern boundary of the county. This region is watered by numerous streams flowing from the Santa Lucia Mountains to the ocean, which are bordered with a timber growth of willows, cottonwood, sycamore, laurel, and live oaks. The hills are sparsely timbered with sagebrush and chamisal. A chain of highlands or hills line the coast, rising in many places directly from the water's edge. These begin just south of Santa Rosa Creek and extend to within a few miles of Cayucos, where a break occurs. Immediately south of Morro or Estero Bay they again follow the coast line to within a few miles of the southern boundary of the county.

The northern section, lying between Santa Rosa Creek and Cayucos, does not exceed 250 feet in height, but south of Morro they attain in places an altitude of 2,000 feet, protecting the valleys from the too direct and unintermitting influence of the sea wind. The protection thus afforded by this natural barrier enables the farmer to raise fine grades of wheat, the most valuable of all the cereals.

The coast region is the chief farming portion of the county. Its lands are of three grades—dark loams of the bottoms, suitable for vegetables, etc.; dark or reddish sandy loams of the valleys, resting on heavy clays, and lighter and gravelly soils of the hills and rougher portions of the valley. The crops of this region comprise wheat, barley, corn, potatoes, and several varieties of fruits and grapes. In the Summer months the prevailing northwest winds occasionally blow with some violence immediately along the coast and through the valleys, which open fairly to the sea, and drive through them great fog drifts, which rise from the ocean in the evenings and settle down at night close to the earth. But at sunrise the fog rises, and rolling up the mountain sides, disappears. The valleys lying closer to the western slope of the Santa Lucia Range are comparatively exempt from the winds and fogs. The lands of Corral de Piedra Valley have a heavy loam soil, with streaks of adobe, and are said to yield 40 bushels of wheat per acre. The average of lands under cultivation in the county is 51.3 acres per square mile, while the average of population is but 2.6 persons per square mile. Dairying and cheese making is extensively carried on in the county.

A short line of railroad connects San Luis Obispo with Port Harford, where the steamers of the Pacific Coast Steamship Company touch regularly.

SANTA BARBARA.

Area, 2,200 square miles. Coast Range mountains, 1,900 square miles; valleys, 300 square miles.

Santa Barbara County is hilly and mountainous, a large proportion being too high and broken for cultivation. The San Rafael Mountains cover more than one third of the county on the northeast, while on the southeast the Santa Inez rises as a narrow range parallel with the coast to an altitude of 3,000 or 4,000 feet.

The western coast line of the county has a north and south trend to Point Concepcion, where it turns abruptly to the east. Lying parallel with this latter portion, and at a distance of about 30 miles, are a number of islands, also, mountains, rising as high as 1,500 feet above the sea. The county is watered by the Santa Maria River on the north and by the Santa Inez on the south, both flowing westward into the ocean and bordered by important valleys.

Santa Maria Valley is about 30 miles long and 10 wide, and lies partly in San Luis Obispo County. The soil is sandy, dotted over with oaks, and has a vegetation of clover and alfilerilla. This valley is chiefly devoted to grazing purposes. The Santa Inez Valley is about 30 miles long and averages 2 miles in width, the width in both this and Santa Maria Valley being greatest some 15 miles from the coast, which they reach through narrow cañons. The valley soil is chiefly a loam and was originally timbered with oaks. The surface presents a series of terraces of 25, 45, and 95 feet elevation, respectively, above the river, and is timbered partly with oaks and sycamore. The valley is chiefly used for pasturage. The Santa Inez range of mountains lies on the south, separating this valley from the coast valley, in which the county seat is situated. This range is steep and rugged and is covered with chamisal brush, but there are some oaks in sheltered places. The coast valley extending from Gaviota Pass, east of Point Concepcion, to the Ventura County line, and varying in width from 2 to about 6 miles in the central part, has a rise of 300 feet inland, and is divided into an upper and lower valley, the former being known as the Santa Barbara Valley, or plain, from the town of that name, from whose southern edge the valley slopes to the coast, forming the lower valley to the eastward. West of the town, and reaching to the Gaviota Pass, the coast line forms a terrace about 80 feet high, sloping landward and inclosing between it and the mountains the upper valley. The soil of the valley is a sandy loam and is largely under cultivation in grain. Irrigation is necessary in the higher lands only.

Carpenteria Valley, lying east of Santa Barbara, is also a coast valley opening south, and surrounded on the other sides by high mountains, its surface gradually rising to the bald hills. The valley was originally well timbered with live oak and some sycamore and walnut. It is well watered with small streams, in whose alluvial lands strawberries and other fruits are raised. The crops are corn, beans, and potatoes. The foothills and mesa lands bear naturally the wild oat.

On the coast, from Point Concepcion northward to Point Purisima, lies the Lompoc Valley, its length being about 37 miles. This valley is thought to contain about 35,000 acres of arable land, and has been mostly devoted to pasturage.

The Los Alamos Valley, lying along the arroyo of that name, reaches from the mountains to the coast, and between the Lompoc and Santa Maria Valleys, its length being about 40 miles, and its greatest width, 2 miles. The largest portion of this valley lies about 25 miles from the coast, and has a soil varying from an adobe to sandy loam, partly under cultivation. On either side are low rolling hills and connecting valleys.

KERN.

(See "Great Valley Region.")

TULARE.

(See "Great Valley Region.")

VENTURA.

Area, 1,690 square miles. Coast Range mountains, 1,520 square miles; valleys, 170 square miles.

Ventura County is mostly hilly and mountainous, the northern half rising to an elevation of more than 4,000 feet above the sea, and forming a part of the Coast Range. The southern part, while hilly and broken with mountain ridges, is interspersed with numerous valleys, which are well watered and afford fine farming lands.

The Santa Clara and Buenaventura Rivers are the chief streams of the county, both rising among the mountains and flowing to the ocean. The former is the longest, and is bordered throughout its length by a valley, which, from near Newhall, in Los Angeles County, varies in width, from a mile and less, as far as Santa Paula, then widens gradually, until within about 12 miles from the coast it suddenly expands to about 16 miles on the coast. This is the largest valley region of the county, and contains considerable land under cultivation in wheat, barley, corn, and beans. Above Santa Paula, the soil is generally sandy; below, to the coast, it is dark gray silty loam of great depth, and remarkable for its retention of moisture near the surface. Saticoy plain, or delta, of the Santa Clara River, is noted for its high production of corn and beans, a large part of the State's marketable supply being grown here. Hogs are also extensively raised.

Buenaventura River is bordered by a valley about 20 miles long and one fourth of a mile wide, which has sandy soils and is largely under cultivation. The mountain valleys usually have an adobe soil, with much vegetable matter. Those valleys whose elevation is less than 2,000 feet are partly under cultivation in wheat and other grain. Of these the Ojai is most noted, and lies along the Cañada Larga. It has an elevation of from 800 to 1,000 feet, and is divided into an upper and lower valley. This valley is about 6 miles long and 1½ miles wide, and is largely timbered with live and white oaks, and some cottonwood. The soil of upper Ojai is a rich black adobe, yielding 50 or 60 bushels of wheat per acre, while that of the lower valley is a reddish gray sandy loam, much under cultivation.

The Sulphur Mountain Range, between Ojai and Santa Clara Valleys, is remarkable for its extensive deposits of asphaltum, which substance oozes out at certain levels throughout the range, and at times forms bubbling springs and flowing streams of thick petroleum. In the Sespe Valley a flowing petroleum well of high production has been obtained, and numerous others of moderate yield exist in other parts of the county. The soil of the mountains is a reddish loam, largely timbered with fir and pine. Cotton has been successfully raised in this county, but only in very small patches and with extra attention, it being too much exposed to trade winds and fogs from the ocean.

The county is connected with San Francisco by the Pacific Coast line of steamships.

COAST RANGE REGION.

(North of San Pablo Bay.)

(This region embraces the following counties and parts of counties: Marin, Sonoma, Napa, Solano,* Yolo,* Lake, Colusa,* Mendocino, Tehama,* Shasta,* Trinity, Humboldt, Siskiyou,* and Del Norte.)

MARIN.

Area, 580 square miles. Nearly all Coast Range mountains.

Marin County is bounded on the west by the ocean, and on the east, in part, by San Francisco and San Pablo Bays; the Golden Gate separating it from the County of San Francisco on the south. A range of mountains passes through it in a northwest direction; Mount Tamalpais, with an altitude of 2,597 feet, being the highest point. The rest of the county embraces high hills and small valleys, watered by numerous streams, flowing chiefly to the bay on the east. Both the east and the west shores are abrupt, and deeply indented by bays, of which Drake's and Tomales are the chief; that of Tomales, on the northwest, being the largest, reaching inland for 16 miles, with a width of 2 or 3 miles, and occupying a valley between two or more mountain ridges. Point Reyes is a narrow, prominent headland. There is but little level land in the county, the valleys along the streams being quite narrow, and the hills approaching close to the shore lines. The mountains were originally timbered with redwood and pine, but the greater part has been cut away; the lower hills and many of the valleys have a sparse growth of oak. The soil of the hills and rolling lands is usually a black adobe, more or less gravelly; that of the valleys, a dark sandy loam, rich and productive.

There is a large area of salt marsh along the eastern shore, some of which has been reclaimed by levees, and is now termed meadow lands. Dairying is the chief occupation of the people of the county, for which the valleys and hills, with their abundant vegetation, afford excellent pasturage. The lands under cultivation average 36.8 acres per square mile for the entire county.

Under the lee of Mount Tamalpais, near San Rafael, the climate of San Francisco Bay is sufficiently tempered to allow the grape and the fig to ripen regularly.

Transportation facilities are furnished by two lines of railroad, which connect by steamer with San Francisco. San Rafael being practically a residence suburb of the former city, is much frequented on account of its milder climate.

SONOMA.

Area, 1,520 square miles. Coast Range mountains, 1,170 square miles (redwood lands, 300 square miles); valleys, 350 square miles; tule lands, some.

The surface of Sonoma County is hilly and mountainous, interspersed with numerous fertile and well watered valleys. The principal stream is Russian River, which, entering the county from the north, flows southeastward for a distance of about 25 miles, and then turns westward to the coast. It has many small tributaries, which drain the greater part of the county, each bordered by narrow valleys. The northern part of this county is the most mountainous, some of the spurs of the Coast Range being from 2,500 to 3,000 feet high. Many of the mountains and some of the lower hills are covered with a growth of redwood, pine, and fir, but, in some of the valleys, and on the northeastern slopes of the hills, there is a scattered growth of oak, madrona, large manzanita, buckeye, etc., with some willow and sycamore along the streams. The southern part, "from the coast inland to Santa Rosa Valley, is a succession of low, well watered valleys, bare of trees, and covered by a good depth of soil and a rich sward of natural grasses, which are kept green for most of the year by the sea mists which roll over them, during the dry Summer months." The low mountain ridges eastward to Napa County are partly covered with a chaparral of chamisal, manzanita, and other growths.

The principal valleys are Russian River and Santa Rosa Valleys on the north and central portions of the county, and Petaluma and Sonoma Valleys on the south, the latter being separated by low mountains. The first two, with Petaluma Valley, form a central valley through the county from north to south, through which the San Francisco and North Pacific Railroad runs to Cloverdale, a distance of 50 miles. Russian River Valley is narrow, and for 15 miles from its mouth was originally covered with a heavy growth of redwood, but otherwise, with the exception of scattered groves of oak, it is almost destitute of trees. Its lands are alluvial loams, very rich and productive. The Valley of Santa Rosa is about 10 miles long and 6 wide, bordered by low mountains on the west and a higher range on the east, and is generally under cultivation. The county seat, located here, is surrounded with oak and other trees. Bennett Valley, 8 miles long and 3 miles wide, unites with this valley near the town, and its soil varies from a red loam to dark adobe, and is largely under cultivation in grapes. The timber growth of the valley and the adjoining hills is white, black, and live oaks, madrona, etc. Petaluma Valley, on the south, is about 20 miles long and 3 miles wide, and its soils are rich and moist and well adapted to the cultivation of fruit, corn, and wheat. There is much salt marsh bordering the bay on the south, the tract being estimated to contain about 17,000 acres; but it is partly reclaimed and under cultivation, two or three years being required before it is made ready for planting.

Sonoma Valley, to the eastward of Petaluma, and separated by a mountain range, reaches about 16 miles northward from San Pablo Bay, and has a width of about 2 miles. At its northern end it forks, passing into Guillocos Valley on the east, while northward it connects with Santa Rosa Valley through Bennett's Valley. Its southern portion is occupied by marsh and tule lands to within a few miles of the Town of Sonoma, the rest of the valley having a light gravelly loam soil, with water not far below the surface. It is almost exclusively devoted to the cultivation of the grape and fruits, transportation facilities being afforded by the Sonoma Valley Narrow Gauge Railroad. There are valleys, of greater or less extent, among the hills in the western part of the county; two of considerable size extending through this region—one the valley of the Estero Americano, running from west to east through Bodego Township, terminating at Tomales Bay; the other Green Valley, extending from north to south, the stream from which the valley takes its name emptying into Russian River. Green Valley is almost exclusively devoted to fruit culture.

The land of the county is classified by the Assessor into four grades. The first and least valuable grade is the mountain, brushy, and bare hill lands, estimated at 300,000 acres, and utilized only for pasturage. The second grade, timber lands and hillside pasturage, is estimated at 200,000 acres. The third grade is mainly rolling lands, denuded of timber, lying along or near the seacoast, used for dairy purposes, and estimated at 200,000 acres. The fourth grade, rich bottom lands, estimated at about 150,000 acres.

Along the mountain and hillsides, some 300 or 400 feet above the valley, there is a "thermal belt" elevated above the frost limits, where many tender fruits may be successfully grown.

The North Pacific Coast Narrow Gauge Railroad runs through the region to the Russian River, affording convenient transportation. There are, also, good shipping points by sea from Tomales and Bodega Bays. The Sonoma Valley is connected with San Francisco by rail and steamers.

NAPA.

Area, 840 square miles. Coast Range mountains, 620 square miles; Napa Valley, 145 square miles; other valleys, 40 square miles; tule lands, 35 square miles.

Napa County, lying in the eastern part of the Coast Range, is a region of mountains, hills, and valleys, one half of its surface, however, being suitable for cultivation. The mountains on the north, culminating in the volcanic peak of Saint Helena, have their highest elevation within the county, and are heavily timbered with fir, pine, and cedar. To the southward they diminish in height, occasionally flattening out into timbered plateaus 1,500 or 2,000 feet above the sea, and well adapted to cultivation; but in the southern part of the county they sink into low, grassy, and broken hills. The eastern, western, and northern boundary lines rest on the summit of the mountains, while the southern is formed in part by the shore of San Pablo Bay. The principal topographical feature of the county is Napa Valley, which occupies, centrally, a northern and southern position, reaching from the bay 35 miles inland, and having an average width of 4 or 5 miles, except in the northern part (above Yountville), which is only about 1 mile wide. The general surface has a gentle slope southward to the tule lands, and is watered by Napa Creek, which, though small, is a tide-water stream, navigable to Napa City for small craft, and is the largest in the county. Along the lower portion of Napa Slough there is quite an extensive belt of tule lands, some of which have been successfully reclaimed, proving very productive. The soil of the upper valley is gravelly loam, while that part of the southern or lower is a sandy loam, rich and productive, and largely under cultivation.

Knight's Valley, on the north, forms a connecting link between Napa Valley and that of Russian River, in Sonoma County, and is about 7 miles long and 2 miles wide, surrounded by high and heavily timbered mountains. The rest of the county consists of a series of mountain ridges and narrow valleys watered by small streams, those on the northeast being included in the basin of Putah Creek. "East of Napa Valley is Conn Valley, half a mile wide by 6 miles long. South of this is Wooden Valley, 3 miles long and 1 mile wide. North and east of Chiles is Pope Valley, 8 miles long by 1 mile wide. South of Pope is Capelle Valley, 2 miles long and half a mile wide. East of Pope is Berryessa Valley, 7 miles long and 1½ miles wide, and bordered on the east by the high range of mountains that forms the boundary line of the county."—[California As It Is.

The Berryessa Valley is an agricultural region and is largely under cultivation. It is surrounded at first by low hills, and further back by high mountains timbered with pine, fir, and some cedar. The lower ranges are covered with thickets of hazel, buckeye, California bay, and lilac, oak, and ash, and an undergrowth of grasses, wild clover, etc. The valley is dotted with oaks and is devoted to wheat, which yields about 30 bushels per acre. The lower hills are planted in vineyards. Conn Valley is also planted in vines and wheat, but at the head there is a plateau of rolling country heavily timbered with pine and black oak.

The Assessor of the county has estimated that there are 69,051 acres of the best valley land, 38,287 acres of best hill land and poorest valley land, suitable for grazing, 45,891 acres of hill land adjoining the grazing lands, and 31,711 acres of the poorest quality of hill lands.

Cotton has been grown in Napa County at an elevation of 1,500 feet above sea level.

Grape culture is one of the chief industries of the county. The vineyards begin a short distance below Napa City, and extend either side up into the foothills. As we go northward they increase, until in Saint Helena Valley, separated from Lower Napa Valley proper by a narrow pass near Yountville, we find one of the great wine-making centers of the State, and the point where the grape production per acre has been as high as 13 tons, the entire valley and a portion of the slopes, as well as the adjoining plateaus, being occupied by vineyards, wine cellars, etc. Transportation facilities are afforded by the Napa branch of the California Pacific Railroad, which connects at Vallejo with steamers for San Francisco.

SOLANO.

(See "Great Valley Region.")

YOLO.

(See "Great Valley Region.")

LAKE.

Area, 1,100 square miles. Coast Range mountains, 1,000 square miles; valleys, 100 square miles.

Lake County is included between the summits of two branches of the Coast Range, which unite at Mount Saint John's on the north, and have an altitude of from 3,000 to 4,000 feet. The valley thus formed has a length of about 40 miles and a width of nearly 15 miles, the sides of which are bordered "by narrow ridges of broken mountains, separated by deep gorges and narrow cañons, covered with timber, underbrush, wild oats, and wild grapes." Clear Lake is a central feature of the county, covering an area of nearly one third of the valley, and has an altitude of over 1,000 feet above the sea. Its length is about 25 miles, while its width varies from 10 miles on the north to 2 miles on the south, being divided into what are known as upper and lower lakes by Uncle Sam Mountain, which reaches into it and rises abruptly from the water's edge to an elevation of about 2,500 feet. The lake receives the greater portion of the drainage of the county; and has for its outlet Cache Creek, which flows from the southern point eastward through Yolo County. There are no large streams in the county. On the extreme north, and separated from the valley by a range of high mountains, are the headwaters of Elk River, which flows northwestward through Mendocino County.

The mountains are largely timbered with pine, the sugar pine occurring in extensive forests on the north; the hills have an abundant growth of oak and fir. A feature of the southern mountains are the extensive tracts of the chamisal brush, which has been found valuable for sheep.

The farming portion of the county is embraced within the central valley region, lying on the west of Clear Lake and among the hills along the streams.

The eastern shore of the lake is mountainous, but on the west and north of Uncle Sam Mountain there is much level or undulating alluvial loam land from 2 to 5 miles in width, reaching northward above the head of the lake and westward for 15 miles from Lakeport. It is dotted over with oak and willow.

Other valleys are also partially timbered with white oak, and have red sandy and gravelly soils. Coyote Valley is 10 miles long and 3 miles wide, and Long Valley 6 miles long and 2 miles wide. Scott's Valley has sandy soil, and is said to yield 8 tons of potatoes, 30 bushels of wheat, or 50 bushels of corn per acre.

The crops of the county embrace chiefly wheat and barley, but from the luxuriance of the growth of the native grapevine it is presumed that this county will hereafter become an important grape-growing district.

Cloverdale, in Sonoma County, on the San Francisco and North Pacific Railroad, is the shipping point for the north and middle portions of the county, and Calistoga, in Napa County, on the California Pacific Railroad, receives freight for and from the southern part.

COLUSA.

(See "Great Valley Region.")

MENDOCINO.

Area, 3,780 square miles. Coast Range mountains, 3,655 square miles (redwood lands, 745 square miles); valleys, about 125 square miles.

Mendocino is a mountainous coast county, its prominent topographical feature being two chains of Coast Range mountains running nearly parallel and separated by the valleys of Eel and Russian Rivers. The headwaters of these streams rise near the center of the county, on opposite sides of a ridge lying east and west, Eel River flowing thence northward, through Humboldt County, to the coast, receiving the waters of many tributaries along its course, while the Russian River flows southward, through Sonoma County, and drains a smaller basin. Many small streams flow from the western Coast Range of mountains directly and independently into the sea, affording facilities for floating logs, etc., from the mountains and adjoining valleys to the coast.

The Coast Range is covered from one end of the county to the other by a dense growth of redwood, pine, fir, oak, and madrona, with some dogwood, maple, and bay. The tops of the highest peaks, which rise to an elevation of some 6,000 feet, are bare of timber and rugged, and covered only with chaparral. This region is almost exclusively devoted to lumbering. The eastern range of mountains is mostly treeless, and is known as the Bald Hills. There is, however, an abundant growth of clover, wild oats, etc., and the region is largely used as a sheep pasture.

The lands of the county suitable for cultivation have been estimated to cover about 900,000 acres, and lie chiefly in the valleys adjoining the two rivers and their larger tributaries. Two hundred thousand acres more are good grazing lands, while the rest of the county area is rugged and mountainous.

Sherwood Valley, at an elevation of 2,500 feet, is 5 miles long and 1 mile wide. The soil of this valley is mostly a dark sandy loam, and is well adapted to the growth of cereals and fruits.

Shipments of supplies to and from the southern part of the county are made by wagon to Cloverdale, in Sonoma County, and thence by railroad to San Francisco. Coasting vessels carry on an extensive trade between the coast towns and the City of San Francisco.

TEHAMA.

(See "Lower Foothills Region.")

SHASTA.

(See "Lower Foothills Region.")

TRINITY.

Area, 2,490 square miles. Coast Range mountains, nearly all.

Trinity, lying east of Mendocino County, is a long and narrow county, whose northern boundary lines rest upon the summits of two of the chains of the Coast Range, and whose surface is made mountainous and broken by many other spurs and lofty ridges of the same range. It is watered by numerous streams, all having their sources in the county, and flowing eventually into the ocean on the west. Trinity River, the largest of these, rises in the northeast, in the acute angle formed by the two mountain boundaries, flows southwest for many miles, and then turns sharply to the northwest, receiving, in its course, the waters of many tributaries. The southern part of the county has but very few streams, and is little else than a mass of high rugged mountains, with some good grazing lands. Some points are said to rise to an elevation of 11,000 feet and are often covered with snow through the Summer months. They are granitic in character and their sides are cut up into chasms and cañons. The mountain timber growth is for the most part pine, spruce, fir, and oak, with maple in the lowlands. The valleys along the streams are very narrow and afford comparatively little land suitable for cultivation. The entire arable land in the county is estimated to be not more than 15,000 acres, and is mostly confined to the Trinity River and its tributaries, occurring in small tracts and being partly under cultivation.

The valleys and foothills that often border them are sparsely timbered with oak and pine, while on the streams there is some sycamore, cottonwood, maple, laurel, and ash.

Gold mining is the chief and almost exclusive industry of the county. The crops comprise hay and wheat, for which there is a home market. Supplies are mostly brought by wagon across the mountains from Redding, in the Sacramento Valley, on the east.

HUMBOLDT.

Area, 3,750 square miles. Coast Range mountains, nearly all (redwood lands, 1,000 square miles).

Humboldt, a coast county, is very hilly, mountainous, and rugged, and is watered by the Trinity, Mad, Eel, Mattole, and other smaller rivers, all flowing northwestward into the ocean. These rivers are bordered by some narrow valleys, but are not navigable for small sailing vessels for more than a few miles from the sea. From Eureka eastward to the mountains proper, a distance of about 25 miles, the country is hilly and broken. Much of the county is occupied by the outlying spurs and more westerly ranges of the coast mountains, which, near the coast, are covered with heavy forests of redwood, spruce, and pine. The timber belt, varying in width from 8 to 10 miles, reaches from the coast in some places in this county a distance of several miles, leaving at these points an elevated terrace or sandy beach destitute of timber. The most westerly branch of the Coast Range is rugged and broken within the limits of the county, Mount Pierce, one of its highest peaks, being 6,000 feet high. The more easterly ridge, forming the boundary between this and Trinity County, also rises in some places to a considerable height, Mount Bailey, one of its peaks, being 6,357 feet high. There is much chestnut oak (valuable for tanbark) in this region.

Among the mountains there are small valleys watered by the various streams, but the largest tract of level land lies around Humboldt Bay. The timber growth on the streams is willow, alder, cottonwood, maple, ash, and bay, and the soil is chiefly an alluvial loam, deep, dark, and rich. That of Eel River is so black that with its growth of tussock grass it has received the name of "nigger head" soil. Around the bay and near tide-water there is much overflowed or swamp land, separated from the coast line by a low sandhill region covered with a stunted growth of trees. The hills have usually a dark sandy loam soil, and on the east are covered with grasses, clover, and wild oats, affording an excellent grazing country. The hills around Ferndale are covered with the eagle fern, which often grows to a height of 12 feet; and the Valley of Mattole, in which the town is situated, is 12 miles long and from 4 to 8 miles wide, and also contains much of this growth.

The lands under cultivation lie chiefly in the river valleys on the western side of the county, the soils of which are dark sandy loams, easily tilled, and produce good crops of oats, barley, potatoes, and peas. Lumbering is the chief industry of this western section. The eastern part of the county is chiefly devoted to stock grazing. It has been estimated that of the county area there are 921,600 acres of timbered lands, of which 200,000 acres are of madrona, black and white oaks, and laurel, 450,000 acres are adapted to agricultural purposes, and 500,000 acres suitable only for grazing lands.

The county is at present dependent upon coast steamers and vessels for transportation facilities. Humboldt Bay, 12 miles long and from 2 to 5 miles wide, is one of the largest harbors on the coast, and is almost landlocked.

SISKIYOU.

(See "Sierra Mountain and Higher Foothills Region.")

DEL NORTE.

Area, 1,540 square miles. Coast Range mountains, nearly all (redwood lands, 150 square miles).

Del Norte, the extreme northwesterly county of the State, has a mountainous and broken surface, watered on the east by Klamath River, which crosses it in a southwesterly course, and on the west by Snake River and other streams, which flow to the sea. The Siskiyou chain of mountains, having a general though irregular northeast and southwest trend, forms the divide between the two watersheds, and from this other mountains extend almost at right angles, thus giving to the eastern portion of the county a rugged character. The coast is bordered by a range of hills some 600 feet in altitude, while still inland another range rises to a height of 3,000 feet. Most of the county is well timbered with redwood, fir, spruce, pine, some cedar, hemlock, and myrtle, and there is also a considerable amount of open prairie land. The streams usually have small and narrow valleys, together with swamp and overflowed lands, whose area is estimated at 3,500 acres. The chief industries of the county are dairying, lumbering, and to some extent, mining. Comparatively little land is under cultivation, the average being but 6.9 acres per square mile. Steamers and sailing vessels run between Crescent City, the county seat, and San Francisco.

HIGHER FOOTHILLS (OVER 2,000 FEET) AND SIERRA MOUNTAIN REGION.

(Embraces the following counties and parts of counties: Siskiyou, Modoc, Lassen, Shasta,* Tehama,* Plumas, Sierra, Nevada,* Placer,* El Dorado,* Amador,* Alpine, Calaveras,* Tuolumne,* Mariposa,* Mono, Inyo, Fresno,* Tulare,* and Kern.*)

SISKIYOU.

Area, 5,660 square miles. Sierra mountains, 2,550 square miles; Coast Range mountains, 2,210 square miles; valleys, 900 square miles.

Siskiyou, one of the most northern counties of the State, embraces a region of mountains and high valleys and broad plateaus. The Sierra Nevada and Coast Ranges meet in this county, the culminating point being Mount Shasta, near the southern limit. This celebrated mountain has an elevation of 14,440 feet above the sea, its upper 4,000 feet being covered with snow throughout the year, while its lower 7,000 or 8,000 feet has heavy forests of sugar and pitch pine on all sides but the north, which has only a stunted growth of cedar and oak.

> The Coast Range is most picturesque in this county, the summits being very unlike the rounded hills surrounding the bay of San Francisco, for they rise with their rocky formations of granite and slate into rugged and precipitous peaks. The Sierras also consist in great part of rough and rugged buttes, much of the country thus comprising cañons, gorges, ravines, abrupt mountain walls, precipices, and endless little valleys. This wild country is covered with forests of redwood, fir, and sugar pine.—[*California as It Is.*

The eastern part of the county is a high plateau of lava beds, from 3,000 to 4,000 feet above the sea, interspersed with mountains and volcanic peaks rising many thousand feet higher. A large part of the county is without drainage; but the Klamath River crosses the northwestern corner from Oregon, receiving from the south the waters from Scott's and the upper part of Shasta Valley. In the southern part of Shasta Valley the Sacramento River has its source, flowing southward, while on the east of the mountain McCloud River rises, flows southeast into Shasta County, and finally empties into the Sacramento.

The chief agricultural lands of the county are embraced within Shasta and Scott's Valleys on the west, though there are a few smaller ones that have some good farming land.

Scott's Valley is 40 miles long and 7 miles wide, and lies between Trinity and Salmon Mountains of the Coast Range, which rise to an elevation of nearly 6,000 feet, the valley itself being about 3,000 feet. It is largely under cultivation, yielding grain, fruits, and vegetables. Owing to its elevation, the harvests are late, the grain not being reaped until August or September. Frosts are frequent during the Spring and even the Summer months. The weather in the Summer is warm, with cool nights; in the Winter, often severe, especially on the mountains, where the snow falls to a great depth. Snow also lies to the depth of a foot or two, often for several weeks, in most of the valleys, rendering the use of snowshoes and sleighs a general necessity. Shasta Valley is a barren lava plain, containing, however, a few fertile spots. The whole county is particularly adapted to stock raising, hay for Winter being raised upon the meadows along the watercourses, while the hillsides are covered with bunch grass and other nutritious food. Lumbering and mining are the chief industries of the county.

The average of lands under cultivation is 9 acres per square mile. Supplies are hauled to and from Redding, in Shasta County, the nearest railroad station.

MODOC.

Area, 4,260 square miles. Sierra mountain lands, 3,685 square miles; Surprise Valley, 400 square miles; other valleys, 175 square miles.

Modoc County, in the extreme northeastern corner of the State, has a mountainous and broken surface, drained chiefly by Pit River, which flows southwestward through the county from Goose Lake, on the northern border. The tributaries of this river are chiefly on the south and east, the northwestern part of the county having no drainage system.

The only lands suitable for cultivation are embraced in a few of the valleys in the eastern and southern parts of the county, and of these Surprise Valley is the most important. This valley, lying on the extreme east, extends from north to south, and includes in its eastern side three large lakes, whose lengths are respectively 16, 20, and 15 miles, with width of from 3 to 5 miles. These lakes have no outlet, and sometimes are dry by evaporation. The length of the valley is about 60 miles, and width 15 miles; and it is skirted on two sides by lofty and timbered mountains. It is watered by numerous streams, and is covered with clover and grasses. Its soil is a rich black loam, occupying a strip from 2 to 6 miles in width, whose surface gently slopes toward the lakes. The valley is settled up in neighborhoods, and is partly under cultivation, wheat, barley, and vegetables being the chief crops. Dairying, stock raising, and lumbering are also carried on to a considerable extent.

The valley of Goose Lake lies mostly on the eastern side of the lake (which is 30 miles long, and 15 miles wide, extending into Oregon), reaching back some 4 or 5 miles, and is watered by numerous small streams. Its lands are good for farming purposes, being covered with bunch and other grasses, and are partly under cultivation, yielding crops of wheat, barley, oats, etc. The adjoining mountains, Warner's Range, are heavily timbered with cedar and pine, while on the hillsides and around the lake is an abundant growth of wild plums. On the western side of the lake there is a narrow strip of valley, devoted mostly to dairying. Big or Round Valley, on Pit River, in the southwestern part of the county, and reaching into Lassen County, is 30 miles long and 18 miles wide, and is mostly covered with sagebrush. Its soils are varied in character, from red clays to dark loam and gravelly lands, and spotted with alkali tracts.

Surrounding the valley are several creeks, whose rich bottom lands are, to some extent, under cultivation. Stock raising is the chief industry. The lands under cultivation average but 4.7 acres per square mile for the county at large.

LASSEN.

Area, 5,000 square miles. Sierra mountains, 4,425 square miles; valleys, 575 square miles.

Lassen County embraces a region of rugged mountains, arid and sandy sage plains, vast areas of alkali flats, and clusters of broken hills, with narrow valleys, and lies on the north and east of the Sierra Nevada Mountains, which trend northwest. The Diamond Mountain range, 8,200 feet high, and covered with spruce, pine, and fir, separate it from Plumas County on the south. The other mountains of the county trend in various directions, and have only a few scattered groves of scrubby pitch pine, or "piñon," and dwarf cedar. The only streams of importance are Susan River, in the south, and Pit River, which crosses the northwestern part of the county, the former, with several tributaries, flowing eastward into Honey Lake, while the latter is one of the principal tributaries of the Sacramento.

The rest of the county is almost entirely without streams and includes what is termed the Madaline plains, 5,300 feet above the sea, which is covered with sagebrush. There are several lakes in the southern part of the county covering areas from 12 to 15 miles long and from 8 to 10 miles wide.

Comparatively little of the county surface is suitable for cultivation, the chief bodies of arable land being found in Honey Lake Valley, and in Long Valley, farther south.

The lands of the eastern side of Honey Lake are dry and barren, but on the western side there is a strip of rich sandy loam soil about 2 miles in width and largely under cultivation, yielding from 25 to 30 bushels of wheat per acre with irrigation, which is found to be very necessary. The elevation of the valley is about 4,200 feet. The land on the streams is a dark loam, and is mostly covered with plums, poplars, and willows.

Long Valley reaches southeastward to within 15 miles of Reno, in the State of Nevada, and is quite narrow, except near Honey Lake, "its south side being formed by a very high, heavily timbered ridge, while the rise in the north is gradual and the country dry, timberless, and open. The valley is about 40 miles in length, but is very narrow, having an average breadth of only two or three miles. The principal business of its settlers is the raising of stock and dairying. * * * In the extreme northwestern part of the county, and extending into Modoc County, lies Big Valley, a large stretch of agricultural lands, comprising in this county about 75,000 acres. * * * The mountains that border the valley on the south and west are timbered with oak, cedar, and pine, while the country on the east consists of long oval hills and table lands, stretching away to what is known as Madaline plains. These hills and table lands are interspersed with small valleys, which are adapted to grazing purposes. The small valleys are preferred by settlers as locations because of the proximity of timber, and also of the adjacent hills, which constitute a range for stock. * * * Between Big and Honey Lake Valleys lie Grasshopper, Willow Creek, Eagle Lake, and Horse Lake Valleys, separated from each other and the main valleys by intervening ridges of various heights. Each of the last named valleys are very small and contain but few ranches, and are mostly occupied by the bodies of water from which they derive their name."—[California As It Is.

The crops comprise wheat, barley, oats, rye, corn, etc., for which there is a home market. Supplies for the Pit River region are hauled from Red Bluff, in the Sacramento Valley; those for the Honey Lake region are hauled from Reno, a railroad station in the State of Nevada.

SHASTA.

(See "Lower Foothills Region.")

TEHAMA.

(See "Lower Foothills Region."

PLUMAS.

Area, 2,760 square miles. Lower foothills, 100 square miles; higher foothills and Sierra mountains, 2,660 square miles.

Plumas County is mountainous and very broken, the greater part having an elevation of 3,000 or 4,000 feet above the sea. It is watered by the headwaters of Feather River, which, spreading out toward the northeast and northwest, unite on the southwest and flow toward the Sacramento River. Both these streams have cut their way through gorges and cañons from 300 to 500 feet below the general level of the country, that of Feather River being deepest in the State.

While the central and southwestern part of the county is thus divided into cañons separated by high ridges, the eastern and northern portions rise into the high Sierras, over 6,000 feet above the sea. The surface of the country is well timbered with sugar and yellow pines, spruce, fir, and cedar, the forests being denser upon the slopes of the Sierras than in the lower country on the west and south. Many valleys occur among the high hills of the upper foothill region at the base of the Sierra, and are to some extent suited to farming, but especially to grazing purposes, and most of them are covered with grass. The soil is chiefly coarse sand and gravelly, producing but little dust in dry seasons.

A series of grassy and well watered but treeless valleys stretch across the county for 100 miles in a southeastern direction, connected with each other by cañons, passes, or low divides. The first, in the northwestern, is Big Meadows, comprising some 3,000 acres of fertile land, mostly covered with grasses, and capable of producing crops of grain without irrigation. This, with Mountain Meadows, 15 miles northeastward, and of small area, is mostly devoted to stock raising. Butte Valley, 5 miles south of Big Meadows, is 3 miles long and 1 mile wide. Greenville is in a small valley southeastward of this. Passing southeastward, across a well wooded divide of 4 miles, we come into Indian Valley, which has a length of 8 miles and a width of 4 miles, the whole consisting of first-class farming and grazing land, the chief crops of which is oats. Eleven miles southeastward is Genesee Valley, distinguished for the large amount of vegetables produced by the few settlers. Clover Valley, on the North Fork of Feather River, is a long, gorge-like depression, narrow at its lower end, but spreading out as we ascend, till it reaches a width of a mile or more. Dairying is the chief pursuit in this valley. A few miles southeastward, over another low wooded divide, brings us to the lower end of Sierra Valley, a depression some 20 miles long and 10 miles broad, neither so fertile nor so well watered as the others.—[*Pacific Rural Press.*

Oroville, in Butte County, and Reno, in the State of Nevada, are the nearest railroad points from the western and eastern parts of the county, and thence supplies are hauled in wagons.

SIERRA.

Area, 820 square miles. Lower foothills, 200 square miles; higher foothills and Sierra mountains, 680 square miles.

Sierra County embraces a region of high mountains and table lands, only a small portion of its area having an altitude of less than 2,000 feet. The western part is watered by the headwaters of the Yuba

River, flowing toward the Sacramento Valley through deep cañons; the eastern by a few small streams which enter the State of Nevada. A number of small mountain lakes occur on the high table lands where the Sierra spreads out into flats or depressions, Gold Lake, with a length of 4 miles, and a width of 2 miles, being the source of the Middle Fork of the Feather River.

The eastern half of the county, embracing the Sierra proper, has an elevation of over 4,000 feet, and some of its peaks and buttes rise to 6,000 or 8,000 feet, and are covered with snow for several months of the year, the chief mode of Winter travel being with snowshoes. Sierra Valley, situated among these mountains, is 20 miles long and 10 miles wide, and contains a number of small farms. Owing to its elevation the climate is too severe for ordinary grain crops, but rye and the hardier forage grasses succeed, and stock breeding is pursued with fair success. The inroads of the grasshopper (*Oedipoda atrox*) are sometimes severely felt in this region. The valley is not well watered. Produce is hauled to Truckee for sale or shipment. The upper foothills on the west, with their elevation of from 2,000 to 4,000 feet, cover the larger part of the western half of the county, and embrace a rugged and broken country, and, together with the small area of lower foothills, is interspersed with small red and gravelly valleys, which afford the only farming lands.

The county is well timbered with sugar and yellow pines, fir, cedar, spruce, and much wild plum; but the lower foothills have chiefly a growth of scrubby oak. The chief industries of the county are mining and lumbering.

The nearest railroad point to the western section of the county, from which supplies may be obtained, is Nevada City, in Nevada County, on the south, which is connected by the Northern California Railroad with Colfax, and thence by the Central Pacific Railroad with Sacramento and other points.

NEVADA.

(See "Lower Foothills Region.")

PLACER.

(See "Lower Foothills Region.")

EL DORADO.

(See "Lower Foothills Region.")

AMADOR.

(See "Lower Foothills Region.")

ALPINE.

Area, 730 square miles. All Sierra mountain region.

Alpine County lies upon the summit of the Sierra Range and eastward to the State line, and its surface is described as being but a mass of mountain ranges rising as high as 10,000 feet above the sea, the general level being above 4,000 feet. The eastern half of the county embraces almost the only habitations, and is watered by a number of small streams, the headwaters of Carson River, of Nevada. The

Mokelumne and Stanislaus Rivers rise among the mountains on the west and flow westward, through the foothill countries, into the great valley. Forming the sources of those several streams (on the east) are numerous small lakes, the most of them situated on the summit of the mountain, where it spreads out into a sort of table land. Many of them are wild and beautiful, being skirted by belts of grass or bordered by plats of lawn-like meadow lands. In some instances they are destitute of these grassy surroundings, being closely hemmed in by dark forests, or shadowed by impending cliffs of granite. There are also in this county many grassy, well watered valleys, rendered the more attractive by their rugged and desolate surroundings. Into these the herdsmen from either side drive their cattle for pasturage during the Summer, removing them as Winter approaches, the snows in the higher of these valleys always falling to an immense depth.

Alpine County abounds in spruce and pine forests, the timber on the higher Sierra being of large size, while that on the eastern slope and beyond is of inferior quality. Three fourths of the county is thus heavily timbered. Mining and lumbering are the chief industries, and there is very little farming done in the county. Diamond Valley, in the northeast, seems to be the only one in which lands are cultivated, even to a small extent, the crops being wheat, barley, hay, oats, and potatoes. The Faith, Hope, and Charity Valleys, of the northwest, are inhabited by stock raisers and dairymen during the Summer months, and have an elevation of 7,500 feet above the sea.

CALAVERAS.

(See "Lower Foothills Region.")

TUOLUMNE.

(See "Lower Foothills Region.")

MARIPOSA.

(See "Lower Foothills Region.")

MONO.

Area, 3,400 square miles. Sierra mountains, with some valleys, all.

Mono County lies along the eastern border of the State, and is separated from other counties by the high Sierra chain of mountains on the west, which, with an elevation of 13,000 feet, forms a most effectual barrier to transportation in that direction.

A central feature of the county is Mono Lake, covering a length of 14 miles and a width of 9 miles, whose water is extremely bitter and saline. The northern part of the county is scantily watered by two or more forks of Walker's River, which here have their rise and unite in Nevada, after flowing through deep cañons. On the south are the headwaters of Owen's River, which is the most prominent stream of the county in that portion.

The general altitude of the county is about 6,000 feet, and, besides the Sierra on the west, the eastern part is traversed by the White and Inyo chain of mountains.

The only lands suitable for tillage are situated in the valleys among the Sierra, in small alluvial tracts along Owen's River, and on the two forks of Walker's River. The valleys chiefly in cultivation are Big Meadows and Antelope, each about 15 miles long and 5 miles wide. There is also a little land on the small streams of Mono Lake and at the foot of the Sierra, where the streams have formed an alluvial delta extending a short distance out on the plain. Irrigation is necessary to insure good crops on all of the lands. The country, however, east of the Sierra to the State line, is a desert, volcanic in character, abounding in alkali beds, salt pools, and barren table lands, and destitute of timber, excepting a few scattering willow trees. There is much spruce and pine on the high Sierras, the slopes being well timbered.

Mining is the chief industry of the county, and several large camps are located at the most important mines.

There are comparatively few roads as yet in the county. One, by way of which the mail is carried, leads from Aurora, Nevada, through Blind Springs and Owensville in Mono County, to Independence, in Inyo County. A wagon road which cost a large amount of money has been constructed from Bridgeport, the county seat, over the mountains, by way of the Sonora Pass, to Stockton. Bridgeport may also be reached by way of the Central Pacific Railroad and Aurora.

INYO.

Area, 8,120 square miles. Sierra mountains, 1,950 square miles; valleys, 640 square miles; desert lands, 553 square miles.

Inyo County lies between the State line and the high Sierra Nevada Mountains, the western boundary being along the summit of the latter, at an elevation of several thousand feet above the general level of the rest of the county, and 8,000 or 10,000 above the sea, some of the peaks rising to 14,000 and 15,000 feet. Parallel with the Sierra is the White and Inyo chain, lying centrally in the county, and still eastward the shorter chains of Telescope, Panamint, Amargosa, and others.

The only stream of importance is Owen's River, on the west, watering a long valley of the same name lying between the Sierra and Inyo Mountains. This river has its source in Mono County on the north, and flows for nearly 100 miles southward into Owen's Lake, a large body of salt water about 22 miles long, 8 miles broad, and of great depth, which has no outlet. The Amargosa River on the southeast rises in Nevada, flows southward at first across this county into San Bernardino County for a short distance, and then turns northwest and disappears in Death Valley.

The only tillable lands in the county are embraced in the valleys along Owen's River, at the foot of the Sierra, in a belt varying from a few rods to a mile or more in width, and having an alluvial soil, which is very productive under irrigation. Round Valley, on the extreme north, was first cultivated in 1865, and now produces wheat, oats, barley, etc.; it lies at the foot of the Sierra, at an elevation of 4,000 feet, and is 6 miles long and 3 miles wide. Long Valley has a length of 15 miles, and is chiefly a stock range; but numerous farming settlements occur southward to Independence. All of the country southward from Lone Pine Post Office (15 miles south of Independence), and eastward from Owen's River, and embracing the greater part of the county, is a treeless and sandy desert, without water and almost destitute of grass, and is the upper part of the great Mojave

Desert of the south. It is interspersed with isolated mountain chains and peaks, containing patches of piñon and juniper trees, but otherwise barren. Their valleys have no meadow lands, but several contain extensive alkali flats, beds of salt, and saline and hot springs. A prominent and well known feature of the southeastern part of the county is the Death Valley, which has a length of 45 miles and a width of 15 miles, and sinks from 150 to 200 feet below the level of the sea.

There is but comparatively little in the county under cultivation.

Supplies are transported across the desert from Mojave, the nearest railroad station, by means of the peculiar wagon of the West, known as the "prairie schooner."

FRESNO.

(See "Great Valley Region.")

TULARE.

(See "Great Valley Region.")

KERN.

(See "Great Valley Region.")

CHAPTER V.

IN COMPLIANCE WITH THE LAW.

In the preceding chapter the State was considered descriptively; in this it should have been taken up statistically. The method by which this was attempted to be done was in strict compliance with the provisions of the law by which the bureau was created. The Assessors of the various counties were appealed to, through a circular, of which the following is a copy, to furnish certain classes of information, with which it was supposed they should be conversant, or which they, at least, could readily obtain. The circular referred to ran as follows:

CIRCULAR.

Office of the State Bureau of Labor Statistics,
Corner of Geary and Dupont Streets,
San Francisco, ———, 188—.

To ——— ———

Dear Sir: The Legislature last Winter created the Bureau of Labor Statistics. The law is of the most comprehensive character, embracing within its broad scope almost every industry, trade, and interest common to civilized society; in fact, it imposes a very grave responsibility on the chief officer and his assistant, while but a limited appropriation is made to carry out its provisions. Hence, we are constrained to call upon the people, through their representatives in office throughout the State, to furnish us with such information as the importance of this work demands and the *law* provides we shall secure. Should we be baffled in this, the *report* expected to be sent forth from this office will not come up to the standard that should naturally be expected.

When you consider the vast amount of correspondence, the number of officials we *must* communicate with—such as the various State officials, railroad officials, City and County Assessors, County Clerks, mining superintendents and operators, labor unions, manufacturers of every commodity imaginable, farmers, educational institutions, trades assemblies, organized protective labor and beneficial societies, artisans, producers, merchants, and, in fact, all institutions calculated to throw any light on the condition of the people of this State in a social, political, sanitary, commercial, or moral sense—the magnitude of this effort is self-apparent, and the limited advantages we enjoy almost compel us to forego the task, were we not fully cognizant of the generous response that will be given our questions by all who are interested in the future welfare of California.

We are already in communication with the heads of the various departments of the National Government, particularly with Hon. Joseph Nimmo, Jr., Chief of the Bureau of Statistics of the Treasury Department, and with each of the Labor Bureaus of the different States of the Union. Much valuable information has been secured through those agencies.

A compliance, therefore, with the questions we present to you will enable us, ere the next Legislature convenes, to lay before that body some very valuable data, if we are to judge from what is daily being received from the sources above alluded to.

The bureau is clothed with ample authority under the law to compel answers, but it muc prefers to depend upon the good will of the people. It may not be out of place here to inser Sections 4, 5, 7, and 8, which are as follows, viz.:

Sec. 4. It shall be the duty of all officers of State departments, and the Assessors of the various counties o the State, to furnish, upon the written request of the Commissioner, all the information in their power necessary to assist in carrying out the objects of this Act; and all printing required by the bureau in the discharge of its duty shall be performed by the State Printing Department, and at least three thousand (3,000) copies of the printed report shall be furnished the Commissioner for free distribution to the public.

Sec. 5. Any person who willfully impedes or prevents the Commissoner or his deputy in the full and free performance of his or their duty, shall be guilty of a misdemeanor, and upon conviction of the same shall be fined not less than ten (10) nor more than fifty (50) dollars, or imprisoned not less than seven (7) nor more than thirty (30) days in the county jail, or both.

SEC. 7. The Commissioner shall have power to send for persons and papers, whenever in his opinion it is necessary, and he may examine witnesses under oath, being hereby qualified to administer the same in the performance of his duty, and the testimony so taken must be filed and preserved in the office of said Commissioner; he shall have free access to all places and works of labor.

SEC. 8. The Commissioner shall appoint a deputy, who shall serve the same time and have the same powers as the said Commissioner, as set forth in the preceding sections.

Your own judgment teaches you that it is not an uncommon thing for Legislatures to pass laws of an impracticable character. This is most frequently due to a lack of knowledge of FACT. Hence, we conclude that what is most necessary to the ordinary legislator is INFORMATION. To secure a knowlege of our State and its wonderful resources, as well as its great productions, is one of the principal objects of this bureau, and, although the appropriation is small, by the assistance of each officer applied to, we will be enabled to lay before our law-making powers a proper exhibit of what our State *is*, and leave to *them* the duty of enacting such laws as are best calculated to make her what she *ought to be:* the first in the great sisterhood of States.

Besides, we desire that our report should compare favorably with those of other bureaus of a similar character throughout the Union, and to succeed in that direction we are *entirely* dependent upon the promptness and readiness of the officials, newspaper proprietors, and the people we address, to comply with our request.

It should be a matter of pride with every one *sincerely* interested in the future of California to contribute their share to this meritorious work, as they will find "at the end of two years that the matter thus accumulated will prove far more valuable than tons of campaign speeches."

We might add, also, that should the officers of any county fail or refuse to respond to our inquiries, *the people of the whole State* will regret to see that county exhibiting a blank space in the statistical tables.

And still further we must say that, while the bureau will be obliged to inquire considerably into details of private business in order to *get at the aggregate wealth of the State, the private affairs of individuals will be kept strictly confidential.*

Or, in the language of Hon. John Collett, formerly Chief of the Bureau of Labor in the State of Indiana: "For instance, inquiries are made of A, B, C, D, and E, who are, we will say, merchants and manufacturers; what their sales have been during the past year; how much cash sales; how much on time; what the claims outstanding; what their *bona fide* indebtedness; how many persons employed, male and female; what wages," etc. Not for the purpose of prying into the private business of each, but for the purpose of showing the aggregate of such business in the State and the several counties of the same. *All these will be destroyed as soon as the total for the county is known.* So with each line of business. This is already done every year on assessment blanks, and every ten years by the United States census takers.

We most respectfully call the attention of all Assessors to Forms 1, 2, 3, 4, 5, 6, 7, and 8, which accompany this circular. We would respectfully request you to hand Form "A" to the different manufacturers or employers of labor, to be answered by them and returned to you; and Form "B" you will please hand or send to all employés in the various branches of industry, including agriculture, to be also answered by them and returned to you.

In conclusion, we appeal to the press of the entire State to assist us all they can in furthering the objects of this bureau in its endeavor to secure a knowledge of the relative rates of wages paid in this State, so as to enable us to compare with similar results in other States of the Union, as such knowledge will prove beneficial to all classes of our people.

Trusting, therefore, that you will generously respond to our inquiries, I have the honor to subscribe myself,

Your obedient servant,

JOHN S. ENOS, Commissioner.

Attached to this circular, and, indeed, bound up with it in convenient fashion, were eight forms in blank, to be filled out by the Assessor. Three hundred and twenty-five questions were asked, and that the range of information sought was of the most comprehensive character possible, you may satisfy yourselves by glancing at the reproduction of these forms, appended to these remarks. You will see there that the statistical details sought conform to the classification indicated by the Legislature. Agriculture, for instance, was taken up, a table prepared at great pains, and statistics sought concerning the agricultural lands of the county, their price and extent, the number of farms and their size, those that are owned and those that are rented, the value of the improvements, the character of the implements used, and the number of labor-saving machines employed.

Regarding agricultural laborers, questions were asked upon the number of farm and road hands employed, their wages, sex, hours, nationality, age, average unemployment, and the sanitary condition of their homes and lodgings.

Next the mechanical and manufacturing industries were taken up, the same elaborate series of inquiries put concerning their number, sex, wages, etc., and a list of industries given that ran from asphaltum works to woolen mills, and back from wineries to awning works.

Mines and miners constituted the next subject, the questions including every description of mines and quarries, together with those relating to number, wages, etc., already twice referred to.

Transportation on land and water was next taken up, and all that related to railroads completed, or under construction; to stage roads, to steamers, and to sailing craft, was asked for, together with the number and condition of drivers, pilots, sailors, stewards, and engineers, who found employment thereon.

In the clerical and all other skilled and unskilled labor, to which the next table is devoted, every branch of employment that has not before been enumerated is embraced. The list is an extended one, taking up advertising agents, chemists, clerks, fishermen, printers, school teachers, and the score of other workers for their daily bread that would come under such a general head.

To all the foregoing tables the special proviso was attached that the reports should relate exclusively to Chinese laborers, and, accordingly, the next form, No. 7, refers wholly to the Mongolian. The questions under this form are directed to their habits—social, moral, and sanitary—what they do, what they earn, and what they spend.

Lastly, inquiries were made concerning the inmates of the jails, and other reformatory institutions found in the county; their number, age, sex, nationality, and employments, being the matters most sought after.

In order that a still more exact idea may be obtained of the means made use of to gather the information referred to, a copy in blank of the eight forms is here attached:

STATE BUREAU OF LABOR STATISTICS.

Statistical Statement made by —— ——, Assessor of —— Township (or County).

FORM No. 1.

Relating to Agriculture.

1. How many acres of land (exclusive of town lots) does your county or township contain?
2. How many acres of land (exclusive of town lots) are under cultivation?
3. How many acres of land (exclusive of town lots) are unfit for cultivation?
4. How many acres of land (exclusive of town lots) are timber land?
5. How many acres of land (exclusive of town lots) are open for preëmption?
6. What is the maximum price per acre (exclusive of town lots)?
7. What is the minimum price per acre (exclusive of town lots)?
8. What is the average price per acre (exclusive of town lots)?
9. How many ranches are in your county (or township)?
10. How many ranch owners?
11. How many have from three to ten acres?
12. How many have from ten to twenty-five acres?
13. How many have from twenty-five to fifty acres?
14. How many have from fifty to one hundred acres?
15. How many have from one hundred to two hundred and fifty acres?
16. How many have from two hundred and fifty to five hundred acres?
17. How many have from five hundred to one thousand acres?
18. How many have from one thousand to two thousand five hundred acres?
19. How many have from two thousand five hundred to five thousand acres?
20. How many have five thousand acres and over?
21. How many ranches are worked by owners?
22. How many ranches are worked in shares between owner and renter?
23. How many ranches are worked in shares between owner and laborers?
24. How many ranches are rented?
25. What is the maximum rent per acre?
26. What is the minimum rent per acre?
27. What is the average rent per acre?
28. How many buildings of all kinds (exclusive of city or town buildings) does your county (or township) contain?
29. What is their value?
30. How many miles of fences are in your county (or township)?
31. What is their cost per mile?
32. What is the value of all the agricultural implements in your county (or township)?
33. How many labor-saving agricultural implements are in your county (or township)?
34. What is their value?
35. What is their combined horse (or man) power?
36. What percentage of ranch cultivators in your county (or township) use labor-saving machines?

FORM No. 1—Continued.

Relating to Farm Hands and Road Laborers.

37. How many laborers (Chinese excluded) are employed in agriculture in your county (or township)?
38. What are their ages? From ——, to ——.
39. How many are under fifteen years of age?
40. How many of the laborers are females?
41. What are their ages? From ——, to ——.
42. What are the maximum wages paid (including board) per month?
43. What are the minimum wages paid (including board) per month?
44. What are the average wages paid (including board) per month?
45. What industry of agriculture pays the maximum?
46. What industry of agriculture pays the minimum?
47. How many months in the year are laborers generally employed?
48. When unemployed in agriculture what industry do they pursue to gain a livelihood?
49. What are the maximum hours of labor per diem?
50. What are the minimum hours of labor per diem?
51. What are the average hours of labor per diem?
52. Are those working over the regular hours constituting a day's work, paid extra?
53. If so, how much per hour?
54. If from sickness laborers must abstain from work, are any deductions made from his wages?
55. How many road laborers are in your county (or township)?
56. What is the wages paid to them?
57. What is the laborer's condition in general? Morally, ——; physically, ——; mentally, ——.
58. How many laborers (exclusive of Chinese) are in your county (or township) unemployed?
59. How many of the unemployed are native Americans?
60. How many of the unemployed are foreigners.
61. Their nationality?
62. What are their ages? From ——, to ——.
63. How many under fifteen?
64. How many are females? ——. Their nationality?
65. What are the causes of their idleness? (Please state everything you know about it.)
66. What steps can be taken, or what is necessary, to obtain employment for all in your county (or township)?
67. How do they obtain sustenance and clothing?
68. In what condition are the roads in your county (railroads excluded)?
69. Can you suggest anything that will ameliorate the condition of the laborers and accrue to their benefit?
70. How are the sanitary conditions of the lands in your county?

FORM

Relating to Employés in Mechanical and

Number of Questions.	DESCRIPTION OF ITEMS.
1	How many asphaltum workers are employed in the whole county (or township)
2	How many awning makers are employed in the whole county (or township)
3	How many employés in agricultural implements in the whole county (or township)
4	How many artificial flowers employés in the whole county (or township)
5	How many bag (cotton) manufacturers in the whole county (or township)
6	How many bag (paper) manufacturers in the whole county (or township)
7	How many bakers in the whole county (or township)
8	How many brewers in the whole county (or township)
9	How many blacksmiths in the whole county (or township)
10	How many boilermakers in the whole county (or township)
11	How many brass molders in the whole county (or township)
12	How many bookbinders in the whole county (or township)
13	How many brick makers in the whole county (or township)
14	How many broom makers in the whole county (or township)
15	How many brush makers in the whole county (or township)
16	How many box (cigar) makers in the whole county (or township)
17	How many box (wood, packing) makers in the whole county (or township)
18	How many cabinet makers in the whole county (or township)
19	How many candle makers in the whole county (or township)
20	How many canneries (fish, fruit, etc.,) employés in the whole county (or township)
21	How many carpenters and joiners in the whole county (or township)
22	How many carpenters (ship) in the whole county (or township)
23	How many carriage and wagon makers in the whole county (or township)
24	How many calkers (ship) in the whole county (or township)
25	How many cement makers in the whole county (or township)
26	How many cigar makers in the whole county (or township)
27	How many confectioners in the whole county (or township)
28	How many coffee and spice mill employés in the whole county (or township)
29	How many coopers in the whole county (or township)
30	How many coppersmiths in the whole county (or township)
31	How many cutlers in the whole county (or township)
32	How many employés in distilleries in the whole county (or township)
33	How many employés in dairies in the whole county (or township)
34	How many employés in glassworks in the whole county (or township)
35	How many glovemakers in the whole county (or township)
36	How many gluemakers in the whole county (or township)
37	How many gunsmiths in the whole county (or township)
38	How many hat and cap makers in the whole county (or township)
39	How many iron molders in the whole county (or township)
40	How many ink and mucilage makers in the whole county (or township)
41	How many locksmiths in the whole county (or township)
42	How many employés in limekilns in the whole county (or township)
43	How many machinists in the whole county (or township)
44	How many marble cutters in the whole county (or township)
45	How many employés in watch factories in the whole county (or township)
46	How many millers in the whole county (or township)
47	How many pattern makers in the whole county (or township)
48	How many employés in paper mills in the whole county (or township)
49	How many potters in the whole county (or township)
50	How many employés in powder mills in the whole county (or township)
51	How many plumbers in the whole county (or township)
52	How many employés in rolling mills in the whole county (or township)
53	How many ropemakers in the whole county (or township)
54	How many saddlers and harness makers in the whole county (or township)
55	How many sailmakers in the whole county (or township)
56	How many salt makers in the whole county (or township)
57	How many sash, door, and blind makers in the whole county (or township)

No. 2.

Manufacturing Industries (*Chinese Excluded*).

Total Numbers	Hours Constituting a Day's Work.			Sex.		Wages Paid to Males.				Wages Paid to Females.			
	Maximum	Minimum	Average	Males	Females	Maximum	Minimum	Average	With or Without Board	Maximum	Minimum	Average	With or Without Board
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Number of Questions.	DESCRIPTION OF ITEMS.
58	How many shingle makers in the whole county (or township)
59	How many shoemakers in the whole county (or township)
60	How many soda works employés in the whole county (or township)
61	How many stonecutters in the whole county (or township)
62	How many tailors in the whole county (or township)
63	How many tanners in the whole county (or township)
64	How many tinsmiths in the whole county (or township)
65	How many upholsterers in the whole county (or township)
66	How many wheelwrights in the whole county (or township)
67	How many wine manufacturers in the whole county (or township)
68	How many willow and woodenware employés in the whole county (or township)
69	How many woolen mill employés in the whole county (or township)
70	How many of the aforementioned professions are unemployed
71	Their nationality
72	Their ages? From
73	The causes
74	How do they manage to subsist

Continued.

Total Numbers..........	Hours Constituting a Day's Work.			Sex.		Wages Paid to Males.				Wages Paid to Females.			
	Maximum........	Minimum........	Average........	Male........	Female........	Maximum........	Minimum........	Average........	With or Without Board........	Maximum........	Minimum........	Average........	With or Without Board........
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FORM

Relating to Mines and

Number of Questions.	DESCRIPTION OF ITEMS.
1	How many asphaltum mines are in your county (or township)
2	How many asphaltum miners are in your county (or township)
3	How many coal mines are in your county (or township)
4	How many coal miners are in your county (or township)
5	How many gold placer mines are in your county (or township)
6	How many gold placer miners are in your county (or township)
7	How many gold quartz mines are in your county (or township)
8	How many gold quartz miners are in your county (or township)
9	How many gold hydraulic mines are in your county (or township)
10	How many gold hydraulic miners are in your county (or township)
11	How many silver mines are in your county (or township)
12	How many silver miners are in your county (or township)
13	How many gravel mines are in your county (or township)
14	How many gravel miners are in your county (or township)
15	How many iron mines are in your county (or township).
16	How many iron miners are in your county (or township)
17	How many marble quarries are in your county (or township)
18	How many marble miners are in your county (or township)
19	How many quicksilver mines are in your county (or township)
20	How many quicksilver miners are in your county (or township)
21	How many salt mines are in your county (or township)
22	How many salt miners are in your county (or township)
23	How many granite stone quarries are in your county (or township)
24	How many granite stone miners are in your county (or township)
25	How many limestone quarries are in your county (or township)
26	How many limestone miners are in your county (or township)
27	How many sandstone quarries are in your county (or township)
28	How many sandstone miners are in your county (or township)
29	How many mines not enumerated above are in your county (or township)
30	If so, state whether worked or not, wages paid, etc.
31	How many miners in your county are unemployed?
32	The causes?
33	Their ages and nationality?

No. 3.

Miners (*Chinese Excluded*).

Number of Mines	Number of Miners	Hours Constituting a Day's Work.			Number of Months Employed in the Year	Wages per Day.			
		Maximum	Minimum	Average		Maximum	Minimum	Average	With or Without Board

Form

Relating to Transportation on Land

Number of Questions	Description of Items.
1	How many miles of steam railroads in operation are in your county
2	How many employés of all kinds on above are in your county
3	How many miles of unfinished steam railroads are in your county
4	How many men are employed thereon in your county
5	How many miles of street railroads (horse-power) are in your county
6	How many men are engaged thereon in your county
7	How many conductors are engaged thereon in your county
8	How many drivers are engaged thereon in your county
9	How many miles of macadamized roads are in your county
10	How many men are engaged thereon in your county
11	How many stage drivers in your county
12	How many teamsters hauling, etc., in your county
13	How many draymen hauling, etc., in your county
14	How many agents, railroad, stage, express, and steamboats in your county
15	How many men are engaged in express companies in your county
16	How many steamboats and sailing vessels of all kinds in your county
17	How many captains thereon in your county
18	How many pilots thereon in your county
19	How many pursers thereon in your county
20	How many engineers thereon in your county
21	How many freight clerks thereon in your county
22	How many mates thereon in your county
23	How many stewards thereon in your county
24	How many cooks thereon in your county
25	How many firemen thereon in your county
26	How many sailors thereon in your county
27	How many men generally engaged in transportation are out of employment in your county
28	For what causes
29	Their ages and nationalities
30	How do they subsist

No. 4.

and Water (*Chinese Excluded*).

Miles of Roads	Number of Men	Average Hours per Day	Average Number of Months Engaged per Annum	Wages Paid.			
				Maximum	Minimum	Average	With or Without Board

FORM

Relating to Clerical and all other Skilled and Unskilled

Number of Questions	DESCRIPTION OF ITEMS.
1	How many auctioneers are employed in your county
2	How many advertising agents are employed in your county
3	How many assayers and chemists are employed in your county
4	How many barbers are employed in your county
5	How many bookkeepers in all departments in your county
6	How many bricklayers in your county
7	How many clerks are employed in banking institutions in your county
8	How many clerks are employed in insurance offices in your county
9	How many clerks are employed in lawyers' offices in your county
10	How many clerks are employed in general merchandising in your county
11	How many clerks are employed in county and town governments in your county
12	How many cooks are employed in your county (or town)
13	How many dentists are employed in your county (or town)
14	How many draughtsmen are employed in your county (or town)
15	How many draymen are employed in your county (or town)
16	How many dress and cloak makers in your county (or town)
17	How many engravers in your county (or town)
18	How many engineers (civil) in your county (or town)
19	How many engineers (stationary engines) in your county (or town)
20	How many engineers (mining) in your county (or town)
21	How many florists and gardeners in your county (or town)
22	How many fishermen in your county (or town)
23	How many glaziers in your county (or town)
24	How many journalistic editors in your county (or town)
25	How many journalistic reporters in your county (or town)
26	How many hod carriers in your county (or town)
27	How many hostlers in your county (or town)
28	How many laundrymen in your county (or town)
29	How many longshoremen in your county (or town)
30	How many lumbermen in your county (or town)
31	How many milliners in your county (or town)
32	How many painters (house) in your county (or town)
33	How many fresco painters are employed in your county
34	How many plasterers are employed in your county
35	How many printers are employed in your county
36	How many photographers are employed in your county
37	How many school teachers are employed in your county
38	How many seamstresses are employed in your county
39	How many servants (domestic) are employed in your county
40	How many telegraph operators are employed in your county
41	How many telegraph messenger boys are employed in your county
42	How many waiters (restaurant, hotel, etc.,) are employed in your county
43	How many watchmakers are employed in your county
44	How many well-borers (artesian) are employed in your county
45	How many well-borers (oil) are employed in your county
46	How many wood carvers and turners are employed in your county
47	How many wood cutters are employed in your county
48	How many artisans not above enumerated are unemployed in your county
49	How many of foregoing mentioned professions are employed? Males ------; females ------; nationality ------
50	From what cause
51	How do they manage to subsist

No. 5.

Labor not before Enumerated (*Chinese Excluded*).

Total Number	Sex.		Hours Constituting a Day's Work.			Average No. Months engaged per Annum	Wages Paid to Males.				Wages Paid to Females.			
	Males	Females	Maximum	Minimum	Average		Maximum	Minimum	Average	With or without Board	Maximum	Minimum	Average	With or without Board
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FORM No. 6.

Miscellaneous.

1. What is the total value of all lands and town lots in your county (or township)?
2. What is the total value of all the buildings in the towns of your county (or township)?
3. What is the total value of all the machineries used for mechanical and manufacturing purposes?
4. What is the total value of all materials used in manufactures in your county (or township)?
5. To what extent does the apprenticeship system prevail in the various skilled industries in your county (or township)?
6. Are any trades unions in your county?
7. Name them.
8. What percentage of wage-workers belong to them?
9. How are the sanitary conditions of the workshops of mechanics and manufacturers?
10. How are the sanitary conditions of the dwellings of the wage-workers?
11. What percentage of dwellings are owned by them?
12. What is the cost of rent of dwellings generally occupied by the wage-workers?
13. What is the cost of rent of rooms generally occupied by the wage-workers?
14. What is the cost of food or board per month?
15. What is the cost of fuel? Wood? Coal?
16. What is the cost of water for household purposes per month?
17. What is the cost of water for irrigation purposes?
18. How many poor people live in your county (or township)? Males? Females?
19. Their ages? From?
20. The cause? Nationality?
21. How many rooms do they occupy?
22. What are their conditions? Sanitary? Morally?
23. What suggestions can you make to ameliorate their condition?
24. How many corporations (local) are in your county?
25. Name them.
26. Name capital stock of each.
27. Name cash capital invested in them.
28. Total amount of hands employed in each?

FORM No. 7.

Relating to Chinese (Exclusively).

1. How many Chinese are in your county (or township)? Males? Females?
2. What are their conditions?
3. What are their social habits?
4. What are their sanitary habits?
5. How many of them are married?
6. How many of them are employed?
7. How many of them are domestic servants?
8. What wages are paid to domestic servants per week? Per month? With or without board?
9. How many of them are cooks?
10. What wages are paid to them per week? Per month? With or without board?
11. How many are laundrymen?
12. What wages do they earn per week? Per month? With or without board?
13. How many Chinese laundries are in your county (or township)?
14. How many Chinese do they employ in your county (or township)?
15. How many Chinese cultivate the soil in your county (or township)?
16. What wages are paid them per month with board? Without board?
17. How many Chinese miners are in your county (or township)?
18. What wages do they earn? With or without board?
19. How many of them are employed in manufactures of all kinds?
20. Name the various industries and number employed in each of them?
21. What are the wages paid them in each of the industries employed?
22. What is the gross amount paid them yearly in every branch in which they are engaged?
23. How much do they expend for rent, either per head or collectively, per month?
24. How much do they expend for food, per head or collectively, per month?
25. What percentage of the food are home products?
26. What percentage of the food are imported from foreign countries?
27. How much do they expend for clothing per head each year?
28. What percentage of the clothing is of American manufacture?
29. What percentage of the clothing is imported?
30. How much of their yearly earnings are sent out of the country?
31. What percentage to the amount of earnings?
32. To what extent does their employment come in competition with the white industrial classes?

Form No. 8.

Relating to Inmates of Jails and other Reformatory Institutions.

1. How many inmates are in your county jail and other reformatory institutions in your county? Males? Females? Chinese?
2. What are their ages? Males? Females? Chinese?
3. What are their nationalities?
4. What are their conditions and sanitary habits?
5. How many of the inmates are employed?
6. What does their employment consist of? Males? Females? Chinese?
7. To what extent does their employment come in competition with the labor of mechanics, artisans, and all other white laborers outside of reformatory institutions?

While I do not wish to be considered fault-finding, or to impute a lack of proper zeal to the County Assessors, I am forced to report that the result of these inquiries has been most unsuccessful and useless. I did not anticipate absolute success, nor did I look for such a worthless outcome. Out of the 52 counties, answers indeed were received but from 41. Of this number, 10 reports only were passable, 4 only were good, and 27 so bad that to reprint them, would not only be an incumbering of the State Printer's office, for which there could be no excuse, but would be filling this report with waste paper, and inviting your attention to a series of fiascos from which nothing could be learned except a lesson of incapacity. Lest it should be thought that these strictures are too severe, allow me to quote from one or two of the returns.

One of our County Assessors gives as the total extent of information concerning the mining industry of his county, that there are 2 coal mines, 30 coal miners, 40 gold placer mines, employing 150 miners, 75 gold quartz mines, employing about 1,000 miners, and 2 marble quarries, employing 6 quarrymen. The value of these answers, compared with that sought by the questions, may be imagined. There are 2,000 Chinese in his county, he states, of which 100 are servants, 30 are cooks, 20 are laundry bosses, 100 are laundrymen, 25 are cultivators, and 1,500 are miners, leaving 225 to be accounted for, and presenting figures so suspiciously like guesswork, that they are entirely unreliable. To Form No. 8, relating to the inmates of jails, etc., his solitary answer is that there are 4 prisoners. Everything in the way of comparative data is omitted, while the tables referring to wages, sex, and day labor, do not contain a single figure.

It must not, however, be supposed that this is an exceptional case, for W. S. B. Wilson, the Assessor of Butte County; W. R. Terry, the Assessor of Calaveras County; J. M. Stow, the Assessor of Contra Costa County; W. J. Hutchinson, Assessor of Fresno; J. C. Irwin, of Inyo; S. J. Westlake, of Monterey; John Kean, of Napa; J. M. Garnett, of San Joaquin; C. W. Kingsbury, of Shasta; J. A. Conaway, of Ventura; R. M. Huston, of Yolo; and Lewis Wilder, of Yuba, have returned their reports with these most important tables as blank as when they were sent to them.

In cases where a single figure has been inserted—and in nine cases out of ten the figures have been placed on the wrong page—the answer is most astonishing. According to the Yuba return, for instance, there is but one baker, one cigar maker, one blacksmith, two millers, one tanner, two upholsterers, and one employed in a woolen mill, in the whole county, while, if the report is to be believed, Yuba County does not possess a single bookbinder, cabinet maker, cooper, dairyman, or stonecutter. Even more astonishing than this, if blank means none, there is not a mine, a quarry, a railroad, a stage road, a teamster, an auctioneer, a journalist, a clerk, or a milliner, in Yuba County. The lands have no value, food has no cost, houses no rate of rent, nor corporations any capital. Moreover, there are no Chinese, no jails, and no prisoners. It is not surprising to find that Mr. Wilder, whose information on Yuba County is so original, should have the assurance to suggest, as a plan for ameliorating the condition of laborers, about whom he knows so much, that there should be "a paternal government, with a constitution so framed that the aggregated stealings from labor shall be divided up for the benefit of all the American family every five years."

Mr. Huston, of Yolo, contents himself with scrawling across the page relating to the mechanical, manufacturing, mining, transportation, and clerical industries, that he has "no data" on the subject.

Mr. Conaway, of Ventura, gives, as a reason for his nullity of information, that he is "very busy," and generously refers me for other statistics to his report to the State Board of Equalization, apparently oblivious of the fact, that the figures in that report are not at all what I have asked for.

According to Mr. McKinley, District No. 3, of Placer County, must be a very peculiar place. It contains no agricultural land, has no road laborers, nothing approaching a manufacturing industry, whilst its population consists of 250 gold placer miners, 2 stage drivers, 5 teamsters, 3 chemists, 3 clerks, 15 lumbermen, and 129 Chinese. Notwithstanding this, there are 13 school teachers, who must find it a puzzle to fill their benches.

Even of such a county as San Joaquin, the information given is absolutely nil; not 10 per cent of the questions being answered at all, and not 1 per cent being answered according to the required form.

The laborers of Napa County, according to Mr. Kean, are principally Irish; idleness is caused, strangely enough, by there not being work for all; he cannot suggest anything that would ameliorate the condition of the laborer, and confesses that it is a mystery how he obtains sustenance and clothing. This Assessor not only fails to answer nearly all the questions put him, but thinks that jocoseness is in place, and to the question relating to the subsistence of one class of laborer, answers that it must be "by eating!"

Mr. Westlake, of Monterey, freely confesses, in large characters written across the pages, that he "don't know" anything about the wage-earners, or the industrial condition of his county.

These extracts have not been invidiously selected, nor have the particular reports been referred to because they are exceptionally bad. They are, indeed, fair samples of the remarkable result attending the endeavors of the bureau to collect the information which the Legislature had in view. I say "endeavors" because it has by no means been a single application that has been made to the Assessors. In some cases at least a dozen communications, explanatory and urgent, have been sent to the negligent officials, but all without avail.

The four reports which I have referred to as good are those sent in by T. V. Mathews, Assessor of Santa Cruz County; G. W. Lewis, Assessor of Sonoma County; G. W. Cameron, Assessor of Stanislaus County; and L. A. Spitzer, Assessor of Santa Clara—the last named "return" having been given to an Assessor to aid him in making his report and was never returned.

These three reports will be found reproduced at the close of this chapter, and will show what interesting and valuable documents the forms present when filled in by officials of intelligence, earnestness, and zeal.

The serious question arises here, since the present trial has been a failure, what course must be adopted to secure the information desired? It is true that the law makes such full compliance with the requests of the bureau a matter of duty; but, at the same time, it must be remembered that the Act limits this information to that which it is "in the power" of the Assessors to make. As a matter of fact and of experience—and I say it in a non-critical spirit—the information which the forms call for is not such as the County Assessors could conveniently secure, and, as has been seen, they have evidently not considered it their duty to secure it at all.

I am convinced that the only way to obtain the statistics desired—statistics that shall be full, ample, correct, fresh, and intelligent—will be by personal inspection and report of the Commissioner, or his authorized representative. That such personal collection of data has been impossible during the past two years, and under the forced economical administration of the bureau, you will, of course, appreciate; and I commend it to your honorable attention whether the plan of visiting inspection, which I have indicated, and which I earnestly advocate, is not worthy of being put in practice.

Statistical Statement made by G. W. Cameron, Assessor of Stanislaus County.

FORM No. 1.

Relating to Agriculture.

1. How many acres of land (exclusive of town lots) does your county contain? 966,000.
2. How many acres of land (exclusive of town lots) are under cultivation? 629,000.
3. How many acres of land (exclusive of town lots) are unfit for cultivation? 225,000.
4. How many acres of land (exclusive of town lots) are timber land? 100,000; fuel only.
5. How many acres of land (exclusive of town lots) are open for preëmption? See United States Land Office.
6. What is the maximum price per acre (exclusive of town lots)? $100.
7. What is the minimum price per acre (exclusive of town lots)? $2 50.
8. What is the average price per acre (exclusive of town lots? $24.
9. How many ranches are in your county? 1,245.
10. How many ranch owners? 943.
11. How many have from three to ten acres? 20.
12. How many have from ten to twenty-five acres? 33.
13. How many have from twenty-five to fifty acres? 16.
14. How many have from fifty to one hundred acres? 54.
15. How many have from one hundred to two hundred and fifty acres? 241.
16. How many have from two hundred and fifty to five hundred acres? 223.
17. How many have from five hundred to one thousand acres? 168.
18. How many have from one thousand to two thousand five hundred acres? 136.
19. How many have from two thousand five hundred to five thousand acres? 31.
20. How many have five thousand acres and over? 21.
21. How many ranches are worked by owners? 75 per cent.
22. How many ranches are worked in shares between owner and renter? 25 per cent.
23. How many ranches are worked in shares between owner and laborers? None.
24. How many ranches are rented? About one fourth.
25. What is the maximum rent per acre? Cash, $2 50, of one third grain.
26. What is the minimum rent per acre? From one fourth to one half grain.
27. What is the average rent per acre? One fourth of all grain.
28. How many buildings of all kinds (exclusive of city or town buildings) does your county contain? 1,245 sets buildings.
29. What is their value? $100,000.
30. How many miles of fences are in your county? 1,800, or thereabout.
31. What is their cost per mile? $270.
32. What is the value of all the agricultural implements in your county? $421,000.
33. How many labor-saving agricultural implements are in your county? All.
34. What is their value? $275,000.
35. What is their combined horse (or man) power? 8,350.
36. What percentage of ranch cultivators in your county use labor-saving machines? 80 per cent.

Relating to Farm Hands and Road Laborers.

37. How many laborers (Chinese excluded) are employed in agriculture in your county? 2,150.
38. What are their ages? From 16 to 65.
39. How many are under 15 years of age? Unknown.
42. What are the maximum wages paid (including board) per month? $100.
43. What are the minimum wages paid per month? $20.
44. What are the average wages paid (including board) per month? $30.
45. What industry of agriculture pays the maximum? Skilled thrashers.
46. What industry of agriculture pays the minimum? Gardeners.
47. How many months in the year are laborers generally employed? Six.
48. When unemployed in agriculture what industry do they pursue to gain a livelihood? Cut wood, mine, and work for lumbermen. Small number of tramps. Some go to Monterey.
49. What are the maximum hours of labor per diem? 13.
50. What are the minimum hours of labor per diem? 9.
51. What are the average hours of labor per diem? 11.
52. Are those working over the regular hours constituting a day's work paid extra? No.
53. If so, how much per hour? Nary cent.
54. If from sickness laborers must abstain from work, are any deductions made from his wages? Certainly.
55. How many road laborers are in your county? 50.
56. What is the wages paid to them? $2 and board themselves.
57. What is the laborer's condition in general? Morally, average standard; physically, good; mentally, perfectly sane.
58. How many laborers (exclusive of Chinese) are in your county unemployed? All are employed, except about 100 gamblers and pimps.
59. How many of the unemployed are native Americans? One third.
60. How many of the unemployed are foreigners? Two thirds.
61. Their nationality? Don't know.
62. What are their ages? From 15 to 50.
63. How many under fifteen? 20.
64. How many are females? 25 prostitutes. Their nationality? 50 of Irish, 30 of mixed, and 20 of Spanish.
65. What are the causes of their idleness? (Please state everything you know about it.) Aside from prostitutes there are not five idle women in the county who have no support.
66. What steps can be taken, or what is necessary, to obtain employment for all in your county? Doing very well now.
68. In what condition are the roads in your county (railroads excluded)? Good.
69. Can you suggest anything that will ameliorate the condition of the laborers and accrue to their benefit? This is a farming community. Laborers get good wages, good food, healthful generally, and all find employment that seek it.
70. How are the sanitary conditions of the lands in your county? Generally light, dry, and healthy; miasmatic in a few spots on the river.

FORM

Relating to Employés in Mechanical and

Number of Questions	DESCRIPTION OF ITEMS.
3	How many employés in agricultural implements in the whole county
7	How many bakers in the whole county
8	How many brewers in the whole county
9	How many blacksmiths in the whole county
13	How many brick makers in the whole county
18	How many cabinet makers in the whole county
21	How many carpenters and joiners in the whole county
23	How many carriage and wagon makers in the whole county
26	How many cigar makers in the whole county
27	How many confectioners in the whole county
32	How many employés in distilleries in the whole county
33	How many employés in dairies in the whole county
35	How many glovemakers in the whole county
37	How many gunsmiths in the whole county
43	How many machinists in the whole county
46	How many millers in the whole county
51	How many plumbers in the whole county
54	How many saddlers and harness makers in the whole county
59	How many shoemakers in the whole county
60	How many soda works employés in the whole county
62	How many tailors in the whole county
64	How many tinsmiths in the whole county
65	How many upholsterers in the whole county
66	How many wheelwrights in the whole county

FORM

Relating to Mines and

Number of Questions	DESCRIPTION OF ITEMS.
6	How many gold placer miners are in your county
10	How many gold hydraulic miners are in your county
20	How many quicksilver miners are in your county

No. 2.

Manufacturing Industries (*Chinese Excluded*).

Total Number	Hours Constituting a Day's Work.			Sex.		Wages Paid to Males.				Wages Paid to Females.			
	Maximum	Minimum	Average	Male	Female	Maximum	Minimum	Average	With or Without Board	Maximum	Minimum	Average	With or Without Board
50	10	------	10	50	------	$4 00	$2 50	$3 25	Without	------	------	----	----
2	10	------	10	11	------	2 00	------	------	------	------	------	----	----
11	10	------	10	11	------	1 50	------	------	With	------	------	----	----
25	10	------	------	25	------	3 00	1 50	2 25	------	------	------	----	----
5	10	------	10	5	------	2 00	------	2 00	------	------	------	----	----
6	10	------	10	6	------	2 00	------	------	Without	------	------	----	----
50	10	------	10	50	------	4 00	2 00	3 00	------	------	------	----	----
20	10	------	10	20	------	4 00	2 00	3 00	------	------	------	----	----
2	10	------	10	2	------	------	------	------	------	------	------	----	----
2	10	------	10	1	1	------	------	------	------	------	------	----	----
8	10	------	10	8	------	1 00	------	1 00	With	------	------	----	----
12	14	------	14	12	------	1 00	------	1 00	------	------	------	----	----
12	10	------	10	1	1	1 00	------	1 00	------	------	------	----	----
3	10	------	10	3	------	------	------	------	------	------	------	----	----
4	10	------	10	4	------	3 00	------	------	------	------	------	----	----
12	11	------	11	12	------	2 00	------	------	------	------	------	----	----
10	10	------	10	10	------	3 00	2 50	------	------	------	------	----	----
14	10	------	10	14	------	2 50	------	------	------	------	------	----	----
15	10	------	10	15	------	2 50	------	------	Without	------	------	----	----
2	10	------	10	2	------	1 50	------	------	------	------	------	----	----
12	10	------	10	12	------	2 00	------	------	------	------	------	----	----
8	10	------	10	8	------	3 00	2 50	2 75	------	------	------	----	----
6	10	------	------	6	------	3 00	2 00	2 50	------	------	------	----	----
20	10	------	10	20	------	3 00	------	2 00	------	------	------	----	----

No. 3.

Miners (*Chinese Excluded*).

Number of Mines	Number of Miners	Hours Constituting a Day's Work.			Number of Months Employed in the Year	Wages per Day.			
		Maximum	Minimum	Average		Maximum	Minimum	Average	With or Without Board
20	40	10	--------	--------	3	$2 50	$1 50	$2 00	Without
1	4	10	--------	--------	6	3 00	1 50	2 00	Without
5	3	10	--------	--------	2	2 50	1 50	2 00	--------

FORM

Relating to Transportation on Land

Number of Questions	DESCRIPTION OF ITEMS.
1	How many miles of steam railroads in operation are in your county
2	How many employés of all kinds on above are in your county
11	How many stage drivers in your county
12	How many teamsters hauling, etc., in your county
13	How many draymen hauling, etc., in your county
15	How many men are engaged in express companies in your county

FORM

Relating to Clerical and all other Skilled and Unskilled

Number of Questions	DESCRIPTION OF ITEMS.
1	How many auctioneers are employed in your county
4	How many barbers are employed in your county
5	How many bookkeepers in all departments in your county
6	How many bricklayers in your county
7	How many clerks are employed in banking institutions in your county
10	How many clerks are employed in general merchandising in your county
11	How many clerks are employed in county and town governments in your county
12	How many cooks are employed in your county (or town)
13	How many dentists are employed in your county (or town)
16	How many dress and cloak makers in your county (or town)
19	How many engineers (stationary engines) in your county (or town)
21	How many florists and gardeners in your county (or town)
23	How many fishermen in your county (or town)
24	How many journalistic editors in your county (or town)
25	How many journalistic reporters in your county (or town)
26	How many hod carriers in your county (or town)
27	How many hostlers in your county (or town)
31	How many milliners in your county (or town)
32	How many painters (house) in your county (or town)
34	How many plasterers are employed in your county
35	How many printers are employed in your county
36	How many photographers are employed in your county
37	How many school teachers are employed in your county
39	How many servants (domestic) are employed in your county
40	How many telegraph operators are employed in your county
41	How many telegraph messenger boys are employed in your county
42	How many waiters (restaurant, hotel, etc.,) are employed in your county
43	How many watchmakers are employed in your county
47	How many woodcutters are employed in your county
49	How many of foregoing mentioned professions are unemployed? None idle any length of time except sports, pimps, and gamblers.

No. 4.

and Water (Chinese Excluded).

Miles of Roads	Number of Men	Average Hours per Day	Average Number of Months Engaged per Annum	Wages Paid. Maximum	Wages Paid. Minimum	Wages Paid. Average	Wages Paid. With or Without Board
3							
12	12	16	12	$5 00	$1 50	$3 50	
	3	10	12				
	14	14	12				
	10	14	12	40 00			
	11	14	12				

No. 5.

Labor not before Enumerated (Chinese Excluded).

Total Number	Sex.		Hours Constituting a Day's Work.			Average No. of Months Engaged per Annum	Wages Paid to Males.				Wages Paid to Females.			
	Males	Females	Maximum	Minimum	Average		Maximum	Minimum	Average	With or Without Board	Maximum	Minimum	Average	With or Without Board
3	3					12								
20	20			12		12		$40 00						
40	40		12	8	10	12	$100 00	50 00	$75 00					
10	10		10	8		6	4 00	3 00	3 50					
3	3		10		9	12	5 00	4 00	4 50					
80	80		12			12	100 00	50 00	75 00					
9	9		8			12	125 00	40 00	100 00					
20	20		12			12	50 00	20 00	40 00	*				
4	4		10			12								
20		20			10	12	2 50	1 00	1 50	†				
6	6		10			8	4 00	2 00	3 00					
1	1		10			12								
2	2		8			12								
5	5													
5	5													
12	12		10			6	2 00			†				
14	14		12			12	1 25			†				
6		6	10			12					$2 00	$1 50	$1 75	
20	20		10			6	2 50	1 50	2 00	†				
6			10			3	3 00	2 50	3 00					
12	12		10			12	3 00		2 00					
3	3		10			12								
58	16	42	6	6	6	8	125 00	60 00	75 00	†	80 00	60 00	75 00	
200		200	12			8					20 00	10 00	15 00	*
7	6	1	12			12	50 00	75 00	60 00				60 00	
2	2		12						20 00					
20	15	5	12			12	40 00						20 00	
6	6					12								
50	50		10			4	3 00		2 00					

* With.
† Without.

FORM No. 6.

Miscellaneous.

24. How many corporations (local) are in your county?
25. Name them? Modesto Bank, $150,000 paid up; Grange Company, of Modesto, $6,000; Modesto Water Company, $20,000; Odd Fellows' Hall Association, $10,500; Modesto Publishing Company; Modesto Gas Works, $20,000; Labida Grange Company; Farmers' Warehouse Company; Knight's Ferry Ditch Company; San Joaquin Ditch Company; Exchange Company, of Ceres.
27. Name cash capital invested in them? $300,000.
28. Total amount of hands employed in each? See No. 25.

FORM No. 7.

Relating to Chinese (Exclusively).

1. How many Chinese are in your county? Males, 700; females, 100.
2. What are their conditions? Nearly all doing well in their way. They find employment easily and are generally at work. 20 per cent, perhaps, are gamblers and idlers voluntarily; 99 per cent of the women are prostitutes.
3. What are their social habits? The men never associate or mingle with any one outside of themselves. Judging from the few married ones among them it appears they are a little too social for Americans, and would say their social habits are bad, compared to our standard.
4. What are their sanitary habits? In their person it appears they are cleanly, but their habitations are generally surrounded with slops and garbage. All would indicate bad sanitary habits.
5. How many of them are married? Say 5 per cent that have their families here.
6. How many of them are employed? 80 per cent—560.
7. How many of them are domestic servants? 300.
8. What wages are paid to domestic servants per week? $3 to $5. Per month? $12 to $20 with board.
9. How many of them are cooks? 250 to 300.
10. What wages are paid to them per week? $3 to $5. Per month? $12 to $25 with board.
11. How many are laundrymen? 80, on their own account.
13. How many Chinese laundries are in your county? 27.
14. How many Chinese do they employ in your county? 80.
15. How many Chinese cultivate the soil in your county? 100.
16. What wages are paid to them per month with board? Usually own account.
17. How many Chinese miners are in your county? 100.
23. How much do they expend for rent collectively per month? $1,400.
24. How much do they expend for food collectively per month? $4,800.
25. What percentage of the food are home products? 50 per cent.
26. What percentage of the food are imported from foreign countries? 50 per cent.
27. How much do they expend for clothing each year? About $16,000.
28. What percentage of the clothing is of American manufacture? 66 per cent.
29. What percentage of the clothing is imported? 33 per cent.
30. How much of their yearly earnings are sent out of the country? $20,000.
31. What percentage to the amount of earnings? 18 per cent.
32. To what extent does their employment come in competition with the white industrial classes? Their laundries cut off work from 80 white women. They are employed as cooks and domestic servants, which cuts off work from at least 300 white men. These 380 whites would come into the county if these competitions did not exist.

FORM No. 8.

Relating to Inmates of Jails and Other Reformatory Institutions.

1. How many inmates are in your county jail and other reformatory institutions in your county? Males, 14; Chinese, 1.
2. What are their ages? 17 to 40.
3. What are their nationalities? 75 per cent of Irish, 5 per cent of German, 5 per cent of Spanish, 15 per cent of native sons and Americans.
4. What are their conditions and sanitary habits? Jail crowded, needs ventilation and drainage.
7. To what extent does their employment come in competition with the labor of mechanics, artisans, and all other white laborers outside of reformatory institutions? No extent.

STATE BUREAU OF LABOR STATISTICS.

Statistical Statement made by G. W. Lewis, Assessor of Sonoma County.

FORM No. 1.

Relating to Agriculture.

1. How many acres of land (exclusive of town lots) does your county contain? 850,000.
2. How many acres of land (exclusive of town lots) are under cultivation? 250,000.
2½. How many acres of land are used for grazing? 300,000.
3. How many acres of land (exclusive of town lots) are unfit for cultivation? 100,000.
4. How many acres of land (exclusive of town lots) are timber land? 100,000.
5. How many acres of land (exclusive of town lots) are open for preëmption? 100,000.
6. What is the maximum price per acre (exclusive of town lots)? $100.
7. What is the minimum price per acre (exclusive of town lots)? $5.
8. What is the average price per acre (exclusive of town lots)? $30.
9. How many ranches are in your county? 4,500.
10. How many ranch owners? 4,500.
11. How many have from three to ten acres? 850.
12. How many have from ten to twenty-five acres? 500.
13. How many have from twenty-five to fifty acres? 800.
14. How many have from fifty to one hundred acres? 1,200.
15. How many have from one hundred to two hundred and fifty acres? 600.
16. How many have from two hundred and fifty to five hundred acres? 225.
17. How many have from five hundred to one thousand acres? 150.
18. How many have from one thousand to two thousand five hundred acres? 100.
19. How many have from two thousand five hundred to five thousand acres? 50.
20. How many have five thousand acres and over? 25.
21. How many ranches are worked by owners? Most of them.
22. How many ranches are worked in shares between owner and renter? Very few.
23. How many ranches are worked in shares between owners and laborers? None.
24. How many ranches are rented? About 500.
25. What is the maximum rent per acre? $10.
26. What is the minimum rent per acre? $3.
27. What is the average rent per acre? $5.
28. How many buildings of all kinds (exclusive of city or town buildings) does your county contain? About 10,000.
29. What is their value? About $3,000,000.
30. How many miles of fences are in your county? About 100,000.
31. What is their cost per mile? $250.
32. What is the value of all the agricultural implements in your county? $200,000.
34. What is their value? About $100,000.
36. What percentage of ranch cultivators in your county (or township) use labor-saving machines? 80 per cent.

Relating to Farm Hands and Road Laborers.

37. How many laborers (Chinese excluded) are employed in agriculture in your county? About 1,500.
38. What are their ages? From 15 to 50.
39. How many under fifteen years of age? Very few, if any.
40. How many of the laborers are females? None.
42. What are the maximum wages paid (including board) per month? $30.
43. What are the minimum wages paid (including board) per month? $20.
44. What are the average wages paid (including board) per month? $25.
45. What industry of agriculture pays the maximum? All branches.
46. What industry of agriculture pays the minimum? Pay the average.
47. How many months in the year are laborers generally employed? All the year.
48. When unemployed in agriculture what industry do they pursue to gain a livelihood? They work on roads, streets, dig ditches, or haul lumber or other material.
49. What are the maximum hours of labor per diem? 14.
50. What are the minimum hours of labor per diem? 10.
51. What are the average hours of labor per diem? 12.
52. Are those working over the regular hours constituting a day's work, paid extra? No.
54. If from sickness laborers must abstain from work, are any deductions made from his wages? Yes, if hired by the day; if hired by the month, no deduction is made.
55. How many road laborers are in your county? All road work is done by farm laborers when unemployed in agriculture.
56. What is the wages paid to them? $2.
57. What is the laborer's condition in general? Morally, good; physically, good; mentally, good.
58. How many laborers (exclusive of Chinese) are in your county unemployed? None.
65. What are the causes of their idleness? (Please state everything you know about it.) The cause of idleness with any laborer is dissolute habits. No man need to be idle in Sonoma County who is sober, industrious, and willing to work.
70. How are the sanitary conditions of the lands in your county? Very good.

FORM

Relating to Employés in Mechanical and

Number of Questions	Description of Items.
7	How many bakers in the whole county
8	How many brewers in the whole county
9	How many blacksmiths in the whole county
12	How many bookbinders in the whole county
13	How many brick makers in the whole county
14	How many broom makers in the whole county
20	How many canneries (fruit, fish, etc.,) in the whole county? Each cannery employs about 50 persons
21	How many carpenters and joiners in the whole county
23	How many carriage and wagon makers in the whole county
27	How many confectioners in the whole county
29	How many coopers in the whole county
32	How many distilleries in the whole county. Each employing from two to five men
33	How many employés in dairies in the whole county
35	How many glovemakers in the whole county
37	How many gunsmiths in the whole county
43	How many machinists in the whole county
44	How many marble cutters in the whole county
46	How many millers in the whole county
51	How many plumbers in the whole county
54	How many saddlers and harness makers in the whole county
58	How many shingle makers in the whole county
59	How many shoemakers in the whole county
60	How many soda works employés in the whole county
62	How many tailors in the whole county
63	How many tanners in the whole county
64	How many tinsmiths in the whole county
65	How many upholsterers in the whole county
66	How many wheelwrights in the whole county
67	How many wine manufacturers in the whole county
69	How many woolen mills employés in the whole county
70	How many of the aforementioned professions are unemployed? None

No. 2.

Manufacturing Industries (*Chinese Excluded*).

Total Number	Hours Constituting a Day's Work.			Sex.		Wages Paid to Males.				Wages Paid to Females.			
	Maximum	Minimum	Average	Males	Females	Maximum	Minimum	Average	With or Without Board	Maximum	Minimum	Average	With or Without Board
15	10	10	10	------	------	$3 50	$2 50	$3 00	*	------	------	------	----
4	10	10	10	------	------	3 50	2 50	3 00	*	------	------	------	----
30	10	10	10	------	------	3 50	2 50	3 00	†	------	------	------	----
1	10	10	10	------	------	4 00	4 00	4 00	†	------	------	------	----
1	10	10	10	------	------	2 00	2 00	2 00	†	------	------	------	----
1	10	10	10	------	------	2 50	2 50	2 50	†	------	------	------	----
2	10	10	10	------	------	1 50	1 50	1 50	------	$0 75	$0 75	$0 75	†
150	10	10	10	------	------	3 00	2 00	2 50	†	------	------	------	----
30	10	10	10	------	------	4 00	2 50	3 00	†	------	------	------	----
5	10	10	10	------	------	4 00	4 00	4 00	*	------	------	------	----
5	10	10	10	------	------	4 00	2 00	3 00	†	------	------	------	----
15	10	10	10	------	------	2 00	2 00	2 00	†	------	------	------	----
100	12	12	12	------	------	1 00	1 00	1 00	*	------	------	------	----
2	10	10	10	------	------	2 50	2 50	2 50	†	------	------	------	----
6	10	10	10	------	------	2 50	2 50	2 50	†	------	------	------	----
10	10	10	10	------	------	4 00	2 00	3 00	†	------	------	------	----
10	10	10	10	------	------	3 00	3 00	3 00	†	------	------	------	----
20	10	10	10	------	------	2 50	2 50	2 50	†	------	------	------	----
15	10	10	10	------	------	3 00	3 00	3 00	†	------	------	------	----
30	10	10	10	------	------	2 50	2 50	2 50	†	------	------	------	----
20	12	12	12	------	------	2 50	2 50	2 50	†	------	------	------	----
50	10	10	10	------	------	3 00	2 00	2 50	†	------	------	------	----
10	10	10	10	------	------	3 00	3 00	3 00	†	------	------	------	----
30	10	10	10	------	------	3 00	2 00	2 50	†	------	------	------	----
10	10	10	10	------	------	3 00	2 00	2 50	†	------	------	------	----
10	10	10	10	------	------	3 00	2 00	2 50	†	------	------	------	----
10	10	10	10	------	------	3 00	2 00	2 50	†	------	------	------	----
20	10	10	10	------	------	3 00	2 00	2 50	†	------	------	------	----
35	10	10	10	------	------	3 00	2 00	2 50	†	------	------	------	----
80	10	10	10	------	------	3 00	2 00	2 50	†	75	75	75	†
------	------	------	------	------	------	------	------	------	------	------	------	------	----

* With.
† Without.

Form No. 3.

Relating to Mines and Miners (*Chinese Excluded*).

19. How many quicksilver mines in your county now worked? Three.
Number of miners, 150.
Hours constituting a day's work—Maximum, 12; minimum, 12; average, 12.
Number of months employed in the year, 12.
Wages per day—Maximum, $3; minimum, $2; average, $2 50; without board.

FORM

Relating to Transportation on Land

Number of Questions	DESCRIPTION OF ITEMS.
1	How many miles of steam railroads in operation are in your county
2	How many employés of all kinds on above are in your county
5	How many miles of street railroads (horse-power) are in your county
6	How many men are engaged thereon in your county
11	How many stage drivers in your county
13	How many draymen hauling, etc., in your county
14	How many agents, railroad, stage, express, and steamboats in your county
15	How many men are engaged in express companies in your county

FORM

Relating to Clerical and all other Skilled and Unskilled

Number of Questions	DESCRIPTION OF ITEMS.
1	How many auctioneers are employed in your county
4	How many barbers are employed in your county
5	How many bookkeepers in all departments in your county
6	How many bricklayers in your county
7	How many clerks are employed in banking institutions in your county
8	How many clerks are employed in insurance offices in your county
10	How many clerks employed in general merchandising in your county
11	How many clerks are employed in county governments in your county
12	How many cooks are employed in your county
13	How many dentists are employed in your county
15	How many draymen are employed in your county
16	How many dress and cloak makers in your county
18	How many engineers (civil) in your county
19	How many engineers (stationary engines) in your county
21	How many florists and gardeners in your county
24	How many journalistic editors in your county
25	How many journalistic reporters in your county
26	How many hod carriers in your county
27	How many hostlers in your county
30	How many lumbermen in your county
31	How many milliners in your county
32	How many painters (house) in your county
33	How many fresco painters are employed in your county
34	How many plasterers are employed in your county
35	How many printers are employed in your county
36	How many photographers are employed in your county
37	How many school teachers are employed in your county
40	How many telegraph operators are employed in your county
42	How many waiters (restaurant, hotel, etc.,) are employed in your county
43	How many watchmakers are employed in your county
47	How many woodcutters are employed in your county
49	How many foregoing mentioned professions are unemployed? Males, none; females, none

No. 4.

and Water (Chinese Excluded).

Miles of Roads	Number of Men	Average Hours per Day	Average Number of Months Engaged per Annum	Wages Paid.			
				Maximum	Minimum	Average	With or Without Board
118							
	200	10	12	$3 00	$2 00	$2 50	Without
2							
	1	12	12	2 00	2 00	2 00	Without
	5	12	12	2 50	2 50	2 50	With
	20	12	12	2 50	2 50	2 50	Without
	25	10	12	4 00	2 50	3 00	Without
	25	12	12	4 00	2 50	3 00	Without

No. 5.

Labor not before Enumerated (Chinese Excluded).

Total Number	Sex.		Hours Constituting a Day's Work.			Average No. Months Engaged per Annum	Wages Paid to Males.				Wages Paid to Females.			
	Males	Females	Maximum	Minimum	Average		Maximum	Minimum	Average	With or Without Board	Maximum	Minimum	Average	With or Without Board
5	5		8	8	8	12	$5 00	$5 00	$5 00	*				
50	50		12	12	12	12	2 50	2 50	2 50	*				
15	15		8	8	8	12	3 00	3 00	3 00	*				
10	10		10	8	8	10	3 00	3 00	3 00	*				
10	10		6	6	6	12	3 00	3 00	3 00	*				
5	5		8	8	8	12	3 00	3 00	3 00	*				
100	100		12	12	12	12	2 50	2 50	2 50	*				
5	5		8	8	8	12	4 00	4 00	4 00	*				
30	30		12	12	12	12	1 50	1 50	1 50	†				
5	5		8	8	8	12	4 00	4 00	4 00	*				
20	20		12	12	12	12	2 50	2 50	2 50	*				
20		20	10	10	10	12					$2 50	$2 50	$2 50	*
2	2		8	8	8	12	10 00	10 00	10 00	*				
25	25		10	10	10	12	4 00	4 00	4 00	*				
4	4		12	12	12	12	3 00	3 00	3 00	*				
12	12		8	8	8	12	5 00	5 00	5 00	*				
20	20		8	8	8	12	5 00	5 00	5 00	*				
10	10		10	10	10	10	2 00	2 00	2 00	*				
50	50		12	12	12	12	1 00	1 00	1 00	†				
500	500		12	12	12	8	3 00	2 00	2 50	*				
10		10	10	10	10	12					3 00	2 00	2 50	*
50	50		10	10	10	10	3 00	2 00	2 50	*				
1	1						5 00	5 00	5 00	*				
10	10		10	10	10	10	4 00	4 00	4 00	*				
50	40	10	8	8	8	12	4 00	2 00	3 00	*	3 00	2 00	2 50	*
6	6		8	8	8	12	5 00	5 00	5 00	*				
140	40	100	8	4	6	10	5 00	2 00	3 00	*	3 50	2 00	3 00	*
10	10		8	8	8	12	3 00	3 00	3 00	*				
50	50		10	10	10	12	1 00	1 00	1 00	†				
10	10		8	8	8	12	3 00	3 00	3 00	*				
150	150		12	12	12	12	2 50	2 50	2 50	*				

* Without. † With.

Form No. 6.

Miscellaneous.

1. What is the total value of all lands and town lots in your county? $12,500,000.
2. What is the total value of all the buildings in the towns of your county? $3,500,000.
3. What is the total value of all the machinery used for mechanical and manufacturing purposes? $50,000.
4. What is the total value of all materials, including grain for flour, used in manufactures in your county? $1,000,000.
5. To what extent does the apprenticeship system prevail in the various skilled industries in your county (or township)? There is none.
6. Are any trades unions in your county? No.
12. What is the cost of rent of dwellings generally occupied by the wage workers? $10 per month.
14. What is the cost of food or board per month? $20 per month.
15. What is the cost of fuel? Wood, $5 per cord.
16. What is the cost of water for household purposes per month? $1 50.
17. What is the cost of water for irrigation purposes? $1.
18. How many poor people live in your county? Males, 10; females, 15.
19. Their ages? From 40 to 80.
20. The cause? Age, disease, large family of small children with only the mother left for support.

Nationality? Mixed.

22. What are their conditions? Sanitary, fair; morally, fair.
24. How many corporations (local) are in your county? 17.
25. Name them? Santa Rosa Water Company, Santa Rosa Woolen Mill, Santa Rosa Gas Company, Santa Rosa Street Railroad Company, Santa Rosa Fruit Preserving Company, Santa Rosa Flour Mill, Santa Rosa Bank, Santa Rosa Savings Bank, Santa Rosa Winery, Santa Rosa Planing Mill, Petaluma Savings Bank, Petaluma Bank of Sonoma County, Sonoma Valley Bank, Healdsburg Bank, Healdsburg Farmers' and Mechanics' Bank, Cloverdale Bank, Petaluma Water Company.
27. Name cash capital invested in them? $1,500,000.

Form No. 7.

Relating to Chinese (Exclusively).

1. How many Chinese are in your county? Males, 1,000; females, 20.
2. What are their conditions? Do not know.
3. What are their social habits? Bad.
4. What are their sanitary habits? Bad; filthy.
5. How many of them are married? None.
6. How many of them are employed? 80 per cent.
7. How many of them are domestic servants? 50 per cent.
8. What wages are paid to domestic servants per week? $5; per month, $20 with board.
9. How many of them are cooks? All domestic servants.
11. How many are laundrymen? 25 per cent.
13. How many Chinese laundries are in your county? 50.
14. How many Chinese do they employ in your county? 250.
15. How many Chinese cultivate the soil in your county? 250.
16. What wages are paid them per month with board? Without board, $26.
23. How much do they expend for rent either per head or collectively per month? Very little.
24. How much do they expend for food per head or collectively per month? Very little.
25. What percentage of the food are home products? 25 per cent.
26. What percentage of the food are imported from foreign countries? 75 per cent.
28. What percentage of the clothing is of American manufacture? 25 per cent.
29. What percentage of the clothing is imported? 75 per cent.
30. How much of their yearly earnings are sent out of the country? 75 per cent.
31. What percentage to the amount of earnings? 75 per cent.
32. To what extent does their employment come in competition with the white industrial classes? The same as 75 is to 100.

FORM No. 8.

Relating to Inmates of Jails and other Reformatory Institutions.

1. How many inmates are in your county jail and other reformatory institutions in your county? Males, 40; females, 4; Chinese, 15.
2. What are their ages? Males, 18 to 80; females, 60 to 80; Chinese, 15 to 40.
3. What are their nationalities? Mixed.
4. What are their conditions and sanitary habits? Good, owing to the discipline enforced by the authorities. There are no females in the jail. Those mentioned above are inmates of the county poor-farm. Also, of the 40 males there are 30 who, on account of age, are inmates of the poor-farm. All the Chinese are inmates of the county jail.
5. How many of the inmates are employed? 10.
6. What does their employment consist of? Males, working streets in chaingang; Chinese, working in chaingang.
7. To what extent does their employment come in competition with the labor of mechanics, artisans, and all other white laborers outside of reformatory institutions? Their labor does not interfere with the white laborer.

Statistical Statement made by T. V. Mathews, Assessor of Santa Cruz County.

FORM No. 1.

Relating to Agriculture.

1. How many acres of land (exclusive of town lots) does your county contain? 252,765.
2. How many acres of land (exclusive of town lots) are under cultivation? 30,168.
3. How many acres of land (exclusive of town lots) are unfit for cultivation? 95,441.
4. How many acres of land (exclusive of town lots) are timber land? 125,609.
5. How many acres of land (exclusive of town lots) are open for preëmption? 3,000.
6. What is the maximum price per acre (exclusive of town lots)? $250.
7. What is the minimum price per acre (exclusive of town lots)? $1 25.
8. What is the average price per acre (exclusive of town lots)? $16.
9. How many ranches are in your county? 1,520.
10. How many ranch owners? Estimated 1,520.
11. How many have from three to ten acres? 293.
12. How many have from ten to twenty-five acres? 276.
13. How many have from twenty-five to fifty acres? 259.
14. How many have from fifty to one hundred acres? 420.
15. How many have from one hundred to two hundred and fifty acres? 147.
16. How many have from two hundred and fifty to five hundred acres? 65.
17. How many have from five hundred to one thousand acres? 41.
18. How many have from one thousand to two thousand five hundred acres? 5.
19. How many have from two thousand five hundred to five thousand acres? 7.
20. How many have five thousand acres and over? 7.
21. How many ranches are worked by owners? Estimated, 1,344.
24. How many ranches are rented? Estimated, 176.
25. What is the maximum rent per acre? $8.
26. What is the minimum rent per acre? $3.
27. What is the average rent per acre? $5.
28. How many buildings of all kinds (exclusive of city or town buildings) does your county contain? Estimated at 1,300.
29. What is their value? $474,505.
30. How many miles of fences are in your county (or township)? Estimated at 800.
31. What is their cost per mile? $320.
32. What is the value of all the agricultural implements in your county? $10,655.
33. How many labor-saving agricultural implements are in your county? 36.
34. What is their value? $4,320.
35. What is their combined horse (or man) power? 216.
36. What percentage of ranch cultivators in your county use labor-saving machines? 2½.

Relating to Farm Hands and Road Laborers.

37. How many laborers (Chinese excluded) are employed in agriculture in your county? Estimated at 300.
38. What are their ages? From 20 to 55.
39. How many are under fifteen years of age? None.
40. How many of the laborers are females? None.
42. What are the maximum wages paid (including board) per month? $40.
43. What are the minimum wages paid (including board) per month? $15.
44. What are the average wages paid (including board) per month? $30.
47. How many months in the year are laborers generally employed? Casual laborers, 6 months.
48. When unemployed in agriculture what industry do they pursue to gain a livelihood? They leave the county, and how they afterwards maintain themselves is not known.
49. What are the maximum hours of labor per diem? 12.
50. What are the minimum hours of labor per diem? 8.
51. What are the average hours of labor per diem? 10.
52. Are those working over the regular hours constituting a day's work, paid extra? No.
54. If from sickness laborers must abstain from work, are any deductions made from his wages? Yes, he is paid only for the days that he performs labor.
58. How many laborers (exclusive of Chinese) are in your county unemployed?
65. What are the causes of their idleness? (Please state everything you know about it.) As a proposition there are no road laborers in the above sense. Roads are worked by the owners of land adjoining or by their substitutes.
66. What steps can be taken, or what is necessary, to obtain employment for all in your county? All who seek labor can obtain it without any difficulty.
67. How do they obtain sustenance and clothing? By purchase from their wages.
68. In what condition are the roads of your county (railroads excluded)? Fair.
69. Can you suggest anything that will ameliorate the condition of the laborers and accrue to their benefit? The practice of industry and the observance of sobriety will much benefit them.
70. How are the sanitary conditions of the lands in your county? Could not be better.

FORM

Relating to Employés in Mechanical and

Number of Questions.	Description of Items.
1	How many asphaltum workers are employed in the whole county
7	How many bakers in the whole county
8	How many brewers in the whole county
9	How many blacksmiths in the whole county
10	How many boilermakers in the whole county
11	How many brass molders in the whole county
13	How many brick makers in the whole county
18	How many cabinet makers in the whole county
20	How many canneries (fish, fruit, etc.) employés in the whole county
21	How many carpenters and joiners in the whole county
23	How many carriage and wagon makers in the whole county
26	How many cigar makers in the whole county
27	How many confectioners in the whole county
29	How many coopers in the whole county
30	How many coppersmiths in the whole county
33	How many employés in butter and cheese dairies in the whole county
36	How many gluemakers in the whole county
37	How many gunsmiths in the whole county
39	How many iron molders in the whole county
41	How many locksmiths in the whole county
42	How many employés in limekilns in the whole county
43	How many machinists in the whole county
44	How many marble cutters in the whole county
46	How many millers in the whole county
47	How many pattern makers in the whole county
48	How many employés in paper mills in the whole county
50	How many employés in powder mills in the whole county
51	How many plumbers in the whole county
54	How many saddlers and harness makers in the whole county
57	How many stone masons in the whole county*
58	How many shingle makers in the whole county
59	How many shoemakers in the whole county
60	How many soda works employés in the whole county
61	How many stonecutters in the whole county
62	How many tailors in the whole county
63	How many tanners in the whole county
64	How many tinsmiths in the whole county
65	How many upholsterers in the whole county

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* Sash, door, and blind makers, there are none.

No. 2.

Manufacturing Industries (Chinese Excluded).

Total Number	Hours Constituting a Day's Work.			Sex.		Wages Paid to Males.				Wages Paid to Females.			
	Maximum	Minimum	Average	Male	Female	Maximum	Minimum	Average	With or Without Board	Maximum	Minimum	Average	With or Without Board
16	10	10	10	16	----	D $5 00	D $3 50	D $4 00	----	--------	--------	--------	----
8	15	10	12	8	----	60 00	40 00	50 00	†	--------	--------	--------	----
14	12	10	11	14	----	45 00	25 00	35 00	†	--------	--------	--------	----
53	10	10	10	53	----	D 3 00	D 2 75	D 1 50	*	--------	--------	--------	----
3	10	10	10	3	----	D 5 00	D 4 00	D 4 00	*	--------	--------	--------	----
2	10	10	10	2	----	D 3 50	D 5 00	D 3 00	*	--------	--------	--------	----
10	10	10	10	10	----	60 00	50 00	40 00	†	--------	--------	--------	----
4	10	10	10	4	----	D 4 00	D 2 00	D 3 00	*	--------	--------	--------	----
25	10	10	10	7	18	D 3 00	D 1 00	D 2 00	*	D $1 00	D $0 75	D $0 87½	*
45	10	10	10	45	----	D 4 00	D 2 00	D 3 00	*	--------	--------	--------	----
14	10	10	10	14	----	D 4 00	D 2 00	D 3 00	*	--------	--------	--------	----
2	10	10	10	2	----	75 00	50 00	60 00	*	--------	--------	--------	----
4	10	10	10	4	----	D 3 00	D 2 00	D 2 50	*	--------	--------	--------	----
25	12	8	10	25	----	60 00	60 00	60 00	†	--------	--------	--------	----
5	10	10	10	5	----	D 3 50	D 2 50	D 3 00	*	--------	--------	--------	----
80	12	12	12	80	----	60 00	20 00	28 00	†	--------	--------	--------	----
4	10	10	10	4	----	50 00	40 00	45 00	*	--------	--------	--------	----
2	10	10	10	2	----	D 3 50	D 2 50	D 3 00	*	--------	--------	--------	----
4	10	10	10	4	----	D 3 50	D 2 50	D 3 00	*	--------	--------	--------	----
4	10	10	10	4	----	D 3 00	D 2 00	D 2 50	*	--------	--------	--------	----
110	12	8	10	110	----	50 00	40 00	45 00	†	--------	--------	--------	----
6	10	10	10	6	----	D 4 00	D 3 00	D 3 00	*	--------	--------	--------	----
3	10	10	10	3	----	D 3 00	D 1 50	D 2 50	*	--------	--------	--------	----
5	10	10	10	5	----	100 00	50 00	60 00	*	--------	--------	--------	----
2	10	10	10	2	----	D 3 50	D 3 00	D 3 25	*	--------	--------	--------	----
90	10	10	10	90	----	70 00	50 00	60 00	*	--------	--------	--------	----
80	10	10	10	80	----	D 3 00	D 1 75	D 2 00	*	--------	--------	--------	----
6	10	10	10	6	----	D 3 50	D 2 50	D 3 00	*	--------	--------	--------	----
10	10	10	10	10	----	75 00	60 00	50 00	*	--------	--------	--------	----
10	10	10	10	10	----	D 5 00	D 3 00	D 2 50	*	--------	--------	--------	----
36	10	10	10	36	----	60 00	35 00	45 00	†	--------	--------	--------	----
30	10	10	10	30	----	D 4 00	D 2 00	D 3 00	*	--------	--------	--------	----
4	10	10	10	4	----	50 00	30 00	35 00	*	--------	--------	--------	----
4	10	10	10	4	----	D 5 00	D 3 00	D 3 50	*	--------	--------	--------	----
10	10	10	10	10	----	D 3 00	D 1 50	D 2 25	*	--------	--------	--------	----
94	10	10	10	94	----	50 00	30 00	40 00	†	--------	--------	--------	----
16	10	10	10	16	----	D 3 50	D 2 50	D 3 00	*	--------	--------	--------	----
6	10	10	10	6	----	D 4 00	D 2 50	D 3 00	*	--------	--------	--------	----

D Means daily wages.
* Without.
† With.

FORM

Relating to Mines and

Number of Questions	DESCRIPTION OF ITEMS.
1	How many asphaltum mines are in your county
2	How many asphaltum miners are in your county
5	How many gold placer mines are in your county
6	How many gold placer miners are in your county
25	How many limestone quarries are in your county
26	How many limestone miners are in your county

FORM

Relating to Transportation on Land

Number of Questions	DESCRIPTION OF ITEMS.
1	How many miles of steam railroads in operation are in your county
2	How many employés of all kinds on above are in your county
5	How many miles of street railroads (horse-power) are in your county
8	How many drivers are engaged thereon in your county (driving conductors)
11	How many stage drivers in your county
12	How many teamsters hauling, etc., in your county
13	How many draymen hauling, etc., in your county
14	How many agents, railroad, stage, express, and steamboat in your county
15	How many men are engaged in express companies in your county

No. 3.

Miners (Chinese Excluded).

Number of Mines	Number of Miners	Hours Constituting a Day's Work.			Number of Months Employed in the Year	Wages per Day.			
		Maximum	Minimum	Average		Maximum	Minimum	Average	With or Without Board
1	6	10	10	10	3	D$3 50	D$2 00	D$2 75	Without
1	5	10	10	10	4	D7 00	D6 00	D5 00	Without
6	32	11	11	11	9	63 00	53 00	55 00	With

D Means daily wages.

No. 4.

and Water (Chinese Excluded).

Miles of Roads	Number of Men	Average Hours per day	Average Number of Months Engaged per Annum	Wages Paid.			
				Maximum	Minimum	Average	With or Without Board
41	53	12	12	$150 00	$46 00	$55 00	Without
2½	5	12	12	60 00	50 00	55 00	Without
	4	7	12	60 00	50 00	55 00	Without
	240	10	9	75 00	35 00	50 00	Without
	25	10	12	50 00	40 00	45 00	Without
	12	8	12	80 00	35 00	58 00	Without
	10	14	12	90 00	60 00	70 00	Without

FORM

Relating to Clerical and all other Skilled and Unskilled

Number of Questions	DESCRIPTION OF ITEMS.	Total Number	Sex.	
			Males	Females
1	How many auctioneers are employed in your county	2	2	----
4	How many barbers are employed in your county	14	14	----
5	How many bookkeepers in all departments in your county	6	6	----
6	How many bricklayers in your county	10	10	----
7	How many clerks are employed in banking institutions in your county	4	4	----
10	How many clerks employed in general merchandising in your county	108	98	10
11	How many clerks are employed in county and town governments in your county	9	9	----
12	How many cooks are employed in your county (or town)	80	70	10
13	How many dentists are employed in your county (or town)	7	7	----
15	How many draymen are employed in your county (or town)	25	25	----
16	How many dress and cloak makers in your county (or town)	90	-----	90
17	How many engravers in your county (or town)	4	4	----
19	How many engineers (stationary engines) in your county (or town)	52	52	----
21	How many florists and gardeners in your county (or town)	6	6	----
22	How many fishermen in your county (or town)	35	35	----
23	How many glaziers in your county (or town)	5	5	----
24	How many journalistic editors in your county (or town)	5	5	----
26	How many hod carriers in your county (or town)	10	10	----
27	How many hostlers in your counyt (or town)	46	46	----
30	How many lumbermen in your county (or town)	610	610	----
31	How many milliners in your county (or town)	16	-----	16
32	How many painters (house) in your county (or town)	15	15	----
33	How many fresco painters are employed in your county	2	2	----
34	How many plasterers are employed in your county	8	8	----
35	How many printers are employed in your county	21	21	----
36	How many photographers are employed in your county	3	2	1
37	How many school teachers are employed in your county	76	14	62
38	How many seamstresses are employed in your county	11	-----	11
39	How many servants (domestic) are employed in your county	65	16	51
40	How many telegraph operators are employed in your county	4	2	2
41	How many telegraph messenger boys are employed in your county	2	2	----
42	How many waiters (restaurant,, hotel, etc.,) are employed in your county	79	26	53
43	How many watchmakers are employed in your county	8	8	----
45	How many well-borers (oil) are employed in your county	12	12	----
46	How many wood carvers and turners are employed in your county	3	3	----
47	How many woodcutters are employed in your county	260	260	----
49	Butchers and their employés	37	37	----

No. 5.

Labor not before Enumerated (*Chinese Excluded*).

Hours Constituting a Day's Work.			Average No. Months Engaged per Annum	Wages Paid to Males.				Wages Paid to Females.			
Maximum	Minimum	Average		Maximum	Minimum	Average	With or Without Board	Maximum	Minimum	Average	With or Without Board
*	*	*	----	*	*	*	----	----	----	----	----
14	12	11	12	$70 00	$50 00	$60 00	†	----	----	----	----
11	10	10½	----	100 00	50 00	65 00	†	----	----	----	----
10	10	10	10	D 4 00	D 4 00	D 4 00	†	----	----	----	----
7	6	6½	12	150 00	100 00	125 00	†	----	----	----	----
12	10	11	12	75 00	12 00	43 00	†	$35 00	$20 00	$27 00	†
14	8	10	6	100 00	40 00	70 00	†	----	----	----	----
14	11	13	9	80 00	20 00	35 00	‡	25 00	20 00	22 00	‡
9	7	8	12	75 00	50 00	65 00	†	----	----	----	----
----	7	----	12	50 00	40 00	45 00	†	----	----	----	----
12	9	10	10	----	----	----	----	D 1 50	D 50	D 1 00	----
10	10	10	1	D 4 00	D 3 00	D 3 50	----	----	----	----	----
12	10	11	8	75 00	30 00	50 00	‡	----	----	----	----
10	10	10	8	D 3 00	D 2 50	D 2 75	†	----	----	----	----
18	8	13	10	120 00	40 00	60 00	†	----	----	----	----
10	10	10	2	D 3 50	D 4 00	D 3 75	†	----	----	----	----
8	8	8	12	85 00	85 00	85 00	†	----	----	----	----
10	10	10	8	D 2 50	D 1 50	D 2 00	----	----	----	----	----
16	8	12	6	60 00	50 00	40 00	‡	----	----	----	----
10	10	10	9	65 00	45 00	55 00	‡	----	----	----	----
12	10	11	10	----	----	----	----	D 1 50	D 50	D 1 00	†
10	10	10	6	D 3 00	D 2 00	D 2 50	†	----	----	----	----
10	10	10	3	D 4 00	D 3 00	D 3 50	†	----	----	----	----
10	10	10	10	D 4 00	D 3 50	D 3 00	†	----	----	----	----
10	10	10	12	D 3 00	D 50	D 2 00	†	----	----	----	----
10	9	8	12	65 00	25 00	45 00	†	30 00	30 00	30 00	†
6	6	6	8½	130 00	60 00	77 00	†	80 00	40 00	54 00	†
10	10	10	8	----	----	----	----	D 1 50	D 75	D 1 25	†
12	12	12	9	25 00	10 00	15 00	‡	25 00	10 00	15 00	‡
12	4	11	12	75 00	45 00	60 00	†	50 00	25 00	38 00	†
12	4	11	12	15 00	10 00	12 00	†	----	----	----	----
13	12	12½	7	30 00	15 00	20 00	‡	20 00	15 00	17 00	‡
15	10	12	12	100 00	75 00	85 00	†	----	----	----	----
10	10	10	12	D 5 00	D 3 00	D 3 50	‡	----	----	----	----
10	10	10	12	D 3 50	D 2 50	D 3 00	†	----	----	----	----
10	10	10	9	D 2 50	D 2 00	D 2 25	†	----	----	----	----
15	12	14	12	60 00	50 00	55 00	†	----	----	----	----

* Nominal.
† Without.
D Means daily wages.
‡ With.

Form No. 6.

Miscellaneous.

1. What is the total value of all lands and town lots in your county (or township)? $4,294,370.
2. What is the total value of all the buildings in the towns of your county (or township)? $1,271,245.
3. What is the total value of all the machineries used for mechanical and manufacturing purposes? $63,275.
5. To what extent does the apprenticeship system prevail in the various skilled industries in your county (or township)? Not at all.
6. Are any trades unions in your county? No.
9. How are the sanitary conditions of the workshops of mechanics and manufacturers? Good.
10. How are the sanitary conditions of the dwellings of the wage-workers? Good.
14. What is the cost of food or board per month? $18 to $20.
15. What is the cost of fuel? Wood, $6 per cord.
16. What is the cost of water for household purposes per month? $1 50.
17. What is the cost of water for irrigation purposes? For lawns, 1 cent per square yard; gardens, $1 per acre.
24. How many corporations (local) in your county? 9.
25. Name them? Santa Cruz County Bank, capital stock, $100,000; Santa Cruz Bank of Savings and Loan, capital stock, $100,000; Bank of Watsonville, capital stock, $200,000; Watsonville Mill and Lumber Company, capital stock, $160,000; Pacific Avenue Street Railroad Company, capital stock, $100,000; Santa Cruz Water Company, capital stock, $100,000; Santa Cruz Gas Company, capital stock, $36,000; Santa Cruz Fair Building Association, capital stock, $10,000; Santa Cruz Horticultural Association, capital stock, $5,000.
26. Name capital stock of each? See above.
27. Name cash capital invested in them? $527,000, aggregate.
28. Total amount of hands employed in each? 322, aggregate.

Form No. 7.

Relating to Chinese (Exclusively).

1. How many Chinese are in your county (or township)? Males, 240; females, 6.
5. How many of them are married? 6.
6. How many of them are employed? 206.
7. How many of them are domestic servants? 45.
8. What wages are paid to domestic servants per week? $5; per month, $20, with board.
9. How many of them are cooks? 30.
10. What wages are paid to them per week? $5; per month, $20, with board.
11. How many are laundrymen? 64.
12. What wages do they earn per week? $4; per month, $16, with board.
13. How many Chinese laundries are in your county (or township)? 8.
14. How many Chinese do they employ in your county (or township)? See No. 11.
15. How many Chinese cultivate the soil in your county (or township)? 67.
16. What wages are paid them per month with board? $20.

Form No. 8.

Relating to Inmates of Jails and other Reformatory Institutions.

1. How many inmates are in your county jail and other reformatory institutions in your county? Males, 4; Chinese, 1.
2. What are their ages? Males, 28 to 35; Chinese, 24.
3. What are their nationalities? Swiss, 1; Irish, 2; Chinese, 1.
4. What are their conditions and sanitary habits? Good.
5. How many of the inmates are employed? None.

Chinese Hands Employed in Last
No
No
No
No
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CHAPTER VI.

EMPLOYERS AND EMPLOYÉS.

Accompanying the circulars sent to the County Assessors, which have been referred to in the preceding chapter, were three forms, styled respectively Forms "A," "B," and "C." The Assessors were asked to distribute them, and it is presumed that in some cases this was done; but in order to make assurance doubly sure, these same forms were sent broadcast to the different employers, employés, and labor organizations. Copies of these blanks are herewith appended:

Form A.

To be answered by Employers of hands, etc.

1. What is the name of your firm?
2. In town of?
3. What articles do you manufacture?
4. How much capital have you invested in your business? $——.
5. What are the value of goods manufactured at your establishment in the last twelve months? $——.
6. How much have you paid for labor in the last twelve months? $——.
7. How much have you paid for labor to Chinese employés? $——.
8. What is the greatest number of hands employed at one time during last year?
9. What is the average number of white males employed over sixteen years of age?
10. What is the average number of white females employed over fifteen years of age?
11. What is the average number of boys and girls employed?
12. Give the number of months run on full time? ——. Half time? ——. Idle?
13. What is the average number of Chinese hands employed in the last twelve months?
14. Have wages been advanced? ——. What per cent?
15. Have wages been reduced? ——. What per cent?
16. What has been the average day wages for skilled work: Men? $——. Women? $——.
17. What has been the average day wages for ordinary labor: Men? $——. Women? $——. Boys? $——. Girls? $——.
18. How are wages paid: Weekly?—— Or monthly?
19. If you have any information, or suggestions to make, which will be of advantage to the State, or to your business, please do so.

Form B.

To be answered by Employés, etc.

Dear Sir: You are respectfully requested to return this blank to this office (or to the Assessor of your county), with answers to each of the questions, at your earliest convenience. It will be strictly confidential, and no name will be mentioned in my report to the Legislature. It will be of the greatest importance to the wage-worker to obtain a full and explicit answer.

JOHN S. ENOS, Commissioner.

1. Your name?
2. Place of residence?
3. Occupation?
4. Nationality?
5. Are you married, or single?
6. If married, how many in your family depend on your support?
7. What is the name, or firm, of your employer?
8. Did you serve an apprenticeship to learn your trade, and if so, how long?

9. Do you work by the day, or by the piece?
10. How many hours constitute a day's work where you are employed?
11. How much do you earn per day, or per week?
12. How many days did you lose during the last twelve months by sickness?
13. How many days during the last twelve months were you unable to obtain employment?
14. Do you derive any assistance from the earnings of your wife, or children?
15. If so, how much in the last twelve months?
16. What employment does your wife and children have?
17. What wages are paid them?
18. How many of your children attend school?
19. Do you own the dwelling you live in?
20. If not, how many rooms do you occupy, and how much rent do you pay?
21. Of how many stories is the building in which you work?
22. What provisions exist for escape in case of fire in the factory where you work?
23. How many persons work in it?
24. Have you been implicated in any strikes in the last twelve months?
25. If so, what caused the strike?
26. How did it end?
27. How many days work did you lose by the strike?
28. Are girls and women employed in the place you work?
29. If so, how many?
30. Their wages?
31. Are boys under sixteen employed there?
32. If so, how many?
33. Their wages?
34. Are girls under fifteen employed there?
35. If so, how many?
36. Their wages?
37. Is your occupation unhealthy?
38. From what cause?
39. Are you a member of any benevolent society?
40. How much per week do you receive in case of sickness?
41. Have any considerable number of workmen been discharged the last twelve months from the place where you work?
42. If so, for what reasons?
43. Have you saved anything out of your earnings the last twelve months?
44. If so, what per cent of your earnings?
45. It is often stated that you don't receive a just profit on your labor; what better system can you suggest?
46. If possible, give actual (if not, estimated) expenses for the last twelve months, as follows: For rent, $——; fuel, $——; clothing, $——; groceries, $——; meats, $——; sundries, $——.
47. How many Chinese are employed at the place where you work?
48. If any, what wages do they earn?
49. If employed, do they work in the same room with you?
50. Or are any in the same room with the women or children?
51. Can you suggest anything that will improve the condition of the wage-worker in general? If so, please state it distinctly?

FORM C.

To be Answered by Presidents of Labor Organizations.

We are desirous of collecting statistics relating to labor organizations within the State, and wish to put ourselves in direct communication with these societies. We trust that your society will afford us every facility. Please fill out these blanks at an early day and return to this office.

The answer to any inquiry will be regarded as strictly confidential, if desired.

Yours respectfully,
JOHN S. ENOS, Commissioner.

Name of organization?
No.? —— Located at?
County of?
Date of organization? ———, 188 .
Trade?
Meet when?
Number of members?
Name of M. W. or President?
Post Office address?

Is your organization connected with any State, National, or International organization? If so, give name of same?

Give name and Post Office address of some officer or person connected with each of such other organizations?

Please inclose copy of your constitution and by-laws.

As the best method of presenting the answers to Form "A" I have prepared them in tabulated form.

Of Form "B" there were sent out from this office over 10,000 blanks, of which fully 80 per cent were answered by the Central Pacific Railroad Company employés, leaving but 20 per cent answered by the general laborer, and furnishing another instance of the difficulty met with in gaining information directly from those who should be the most interested in giving it. It would be impossible to find space in this report for the answers to this enormous number of replies, so I have selected the most representative, condensing them generally, and where possible reporting the remarks and suggestions of the answers in their own words:

WORKINGMEN'S RETURNS.

ANSWERS TO FORM "B."

C. R., barber.—I served an apprenticeship; work 14 hours per day; when employed earn $18 per week; occupation not very healthy; am a member of a benevolent society, and when sick receive $30 per month. It is the unanimous desire of the barbers' association that a law should be enacted compelling the barber shops to be closed at noon on Sunday.

R. C., boilermaker.—Work by the hour; wages, 37½ cents per hour; 9 hours constitute a day's work. I am a member of a benevolent society, and receive $18 per week in case of sickness. Would recommend the coöperative system, and less hours of labor per day for the laboring classes.

F. W., brakeman, Central Pacific Railroad.—Work by the month; from 1 to 24 hours constitute a day's work when employed; receive $65 per month. I do not think laborers in general receive enough pay for the amount of work performed in our business. It is dangerous and consumes all of our time.

J. G., brushmaker.—Ten hours constitute a day's work; wages, $2 50 per day.

E. D., brickmaker.—I served an apprenticeship to learn my trade; manufacture brick; 7 hours constitute a day's work; $2 50 for skilled white labor; occupation is healthy.

D. McS., boot and shoe cutter.—Worked 5 years as an apprentice; work by the week; 10 hours constitute a day's work; receive $20 per week; belong to a benevolent society, and receive $15 per week in case of sickness; 18 men employed where I work; no one has been discharged for want of work; steady employment for sober men. In answer to question 45, following answer: "Coöperation or abolition of profit on original investment." In answer to question 51, he says: "Henry George's system of free lands; the issuance of governmental treasury notes for internal improvements, and the calling in of the same by an easy system of taxation, and mechanical industrial instructions in our public schools."

J. C., blacksmith.—Work by the day; 10 hours constitute a day's work; wages $2 35 per day. In answer to question 52 he says: Do away with work-saving machinery and it will do much to solve the problem.

M. W. G., can maker.—Ten hours constitute a day's work; work by the day or by the piece; worked 4 years as an apprentice to learn my trade; work in the Los Gatos Fruit Packing Company; it employs 150 hands; I earn from $4 to $5 per day; am satisfied with my wages.

C. E. B., compositor.—Work for the *Examiner* Publishing Company; served an apprenticeship of 7 years; day's work constitutes, on the average, 12 hours. In answer to question 52, he says: In the printing business, a stringent apprentice system controlled by the State would benefit the wage-worker.

J. P. M., collar and harness maker.—Served an apprenticeship to learn my trade; work by the piece; 10 hours constitute a day's work; I earn, when employed, from $2 50 to $3 per day. In answer to question 45 he says: A coöperative government system in the place of the present one, would insure us a just profit on our labor; and in answer to question 52 he says: The abolishment of convict labor in all mechanical pursuits, the exclusion of Chinese laborers from the American continent, and a high tariff.

G. N. H., horse-collar maker.—Served for 2 years as an apprentice; work by the day; 10 hours constitute a day's work; $15 per week; my occupation is unhealthy, from too much work and bad Chinese breath. In answer to question 45 he says: Less hours, more pay, and better luxury. In answer to question 52 he says: Less hours, more pay, abolish State Prison convict labor, and advance wages in all mechanical pursuits.

E. McC., carpenter and joiner.—Served as an apprentice 6 years; work by the day; 9 hours constitute a day's work; $3 50 per day. In answer to question 52 he says: Eight hours per day, and the Legislature should pass a law to prevent the employment of minor children of tender age in workshops, as injurious to their health and welfare.

H. C., horse-collar maker.—Served as an apprentice 7 years; work by the piece 10 hours a day, and receive $12 per week; my occupation is very unhealthy, hard, and laborious. In answer to question 52 he says: The working of convict labor is the principal curse of the harness and collar business, and I would suggest that the Directors be restrained from selling their products below the actual cost of production at wages that force us into idleness three months in the year, and compels us to work for less than gives us a living.

J. E. C., calker.—Served 7 years as an apprentice; work by the day; 9 hours constitute a day's work, and wages $5 per day; my occupation is healthy, as I am in good air. In answer to question 52 he says: "Low freight and iron ships make work scarce; this is due to the displacement of wooden ships. The railroad overland transportation is another feature of competition impossible to overcome. We have no suggestions to make, as it would be useless under the circumstances."

J. K., cigarmaker.—Served 5 years to learn my trade; work by the piece; 9 hours constitute a day's work; wages from $1 50 to $3 25 per day; boys under 16 receive $3 per week; my occupation is not very healthy from confinement and want of fresh air. In answer to question 52 he says: "Let the Chinese go, and the manufacturer would then obtain a better price for his goods and be able to pay better wages to his employés."

W. C. B., clerk S. P. C. R. R.—Work by the month, and 8 hours constitute a day's work; $75 per month; occupation somewhat unhealthy from close confinement and sewer gas. In answer to question 52 he says: "Save your money, get thoroughly posted in business, and when possible make a start for yourself."

G. G. R., farmer.—Work for my board and clothes; 10 hours are a day's work; am a member of three benevolent societies, and receive $6 a week in case of sickness. In answer to question 52 he says: "By employing white labor at fair wages, and not working more than 10 hours per day, with good food and kind treatment."

M. D., fireman.—Work by the month at $70 per month; 15 hours constitute a day's work. In answer to question 52 he says: "The only thing I can suggest is that hiring a man by the month and working him almost night and day, and Sundays, is entirely wrong and unjust."

T. M. L., section foreman, R. R.—Served 7 years as an apprentice; work by the day at $3 per day; 11 hours constitute a day's work.

F. W., pattern maker.—Served 5½ years as an apprentice; work by the day or piece. In answer to question 45 he says: "Abolish the competition system and establish coöperation in its place." In answer to question 52 he says: "Abolish national banks; let the government issue and loan all the money direct to the people at 1 per cent (as they do to the banks now) through the Post Office department; make all money a full legal tender, and when worn out replace it with new; change the election laws so minorities may be represented; establish a graduated tax law; limit land-holding to 160 acres. Make these changes and the laboring men and mechanics will paddle their own canoe."

J. M. S., engineer C. P. R. R.—Work by the month, at $90; 14 hours constitute a day's work. In answer to question 45, he says: "Less hours a day." And in answer to question 52, he says: "I can't suggest anything with the position I am holding at present."

W. Y., harness and saddlery.—Work by the day; $16 per week; 10 hours constitute a day's work; am a member of a benevolent society, and when sick am taken care of.

S. H. E., horse-collar maker.—Work by the day; 10 hours constitute a day's work; wages, $4 per day. In answer to question 52, he says: "More wages, less work, and an occasional dose of dynamite."

W. E. D., harnessmaker.—Served 5 years as an apprentice; work by the day; wages, $12 to $16 per week; 9 hours constitute a day's work. In answer to question 52, he says: "Abolish convict labor, keep sober, and make the heathen go."

P. K., laborer.—Work by the day; 10 hours constitute a day's work; wages, $2 25 per day; am a member of a benevolent society, and in case of sickness receive $10 per week. In answer to question 45, he says: "Higher wages and less hours."

B. E., varnisher and polisher.—Served an apprenticeship of 5 years; work by day or piece; when working, 10 hours constitute a day's work, and I receive from $2 50 to $3 per day; am a member of a benevolent society, and in case of sickness receive $7 per week. In answer to question 52, he says: By having first class men to take hold of shops, and not fourth rate men as now, then wages will be at a standard figure all the time.

J. D., lather.—Work by the day: 9 hours constitute a day's work; wages, $2 50 to $4 per day. In answer to question 52, he says: Get rid of the Chinese; I have lived in this State 23 years; 8 hours a day's work, can do as much work, and do it as well, as to work 10 hours; all mechanical laborers should not work over 8 hours per day. There is a good demand for labor then in this city, and a good demand for all working classes.

W. R., engineer.—Served as an apprentice 7 years; work by the month; wages $80 per month; 10 hours constitute a day's work; am a member of a benevolent society, and in case of sickness, receive $10 per week. In answer to question 52 he says: Send liberal-minded men to legislate for us, who have the interest of the producing element at heart, and who will put the organic law of our State in force, repeal the statutes which are opposed to the producing element, and then honest men will get their own.

T. H. D., printer.—Served an apprenticeship 7 years; work by the day, 10 hours constituting a day's work; wages $18 per week.

K. C., porter C. P. R. R.—Three years apprenticeship; work by the month; wages $12 50 per week; 14 hours constitute a day's work. Am a member of two benevolent societies, and receive $10 per week when sick. In answer to question 52 he says: In no condition to suggest anything, unless remuneration for the extra time, 14 hours being a little too long a time for a day's work.

J. J., machinist.—Served 4 years apprenticeship; work by the hour; 9 hours constitute a day's work; wages, $2 and $3 per day; belong to a benevolent society, and receive $10 per week when sick. In answer to question 52 he says: stop all foreign cheap labor emigrants, less lawyers to rob the employés, so they will not have to rob their employers or the government, so that we are taxed to death.

P. J. G., iron molder.—Served 4 years as an apprentice; work by the day, at $3 50 per day; 10 hours constitute a day's work; my occupation is unhealthy, as there is too much dust. In answer to question 52 he says: 8 hours for labor, 8 hours for pleasure, 8 hours for sleep, and temperate habits.

N. A. F., machinist.—Served 7 years as an apprentice; work by the piece; 9 hours constitute a day's work. In answer to question 52 he says: Revolutionize the present system of competitive labor and inaugurate in its stead socialistic governmental coöperation.

W. J. S., grain weigher and sampler—Work by the week at $25 per week—9 hours per day. In answer to question 45 he says: A proportionate share of profits with my employer, and an abolishment of the wage system.

W. W., machinist.—Work by the hour; 9 hours constitute a day's work; 38 cents per hour. In answer to question 45 he says: That the Government own and run the railroad. In answer to question 52 he says: Prevent land monopoly and the importation of cheap foreign labor, both Asiatic and European.

J. D. C., tinsmith.—Served 7 years as an apprentice; $2 to $5 per week; am a member of a benevolent association, and receive $30 when sick.

J. B., sailmaker.—Work by the day at $4 per day; 9 hours constitute a day's work. In answer to question 52 he says: "I believe in a standard basis of wages, and think that no one man should perform more work than another in any craft for the same wages."

G. Y. B.—In answer to question 52 he says: "Be temperate, economical, and industrious, fear God, and do unto others as he would that others should do unto him."

L. C. G., sash, door, and blindmaker (foreman).—Work by the day and month; 10 hours constituting a day's work; earn $8 per day; am a member of a benevolent society, and in case of sickness receive $36 per week. In answer to question 52 he says: "Let labor work to the interest of the employer, and provide means by which labor shall be paid promptly, and in cash, and labor not be compelled to buy goods at a store that the employer owns, thus depriving labor of the chance of buying cheap."

E. K. R., blacksmith.—Served 6 years as an apprentice to learn my trade; work by the day; 10 hours constituting a day's work, and earn $3 per day; am a member of a benevolent society, and in case of sickness receive $10 per week; have saved 25 per cent of my year's earnings.

M. K., woodworker.—Work by the day; 10 hours being a day's work, and earn $2 per day; about 60 persons work in the factory in which I am employed; about 15 boys under 16 years are employed, who receive from 50 cents to $2; 20 Chinese are also employed, who make $1 per day.

D. M., driller.—Served 16 years as an apprentice to learn my trade; work by the hour; 9 hours being a day's work; earn 30 cents per hour, $2 70 per day. In answer to question 52 he says: "Prevent land monopoly, and the importation of cheap foreign labor, both Asiatic and European."

M. G., superintendent of an orchard.—Work by the year, and earn $1,200 a year; 50 persons work on the same place, including women and girls; they make from 25 cents to $1 per day. In answer to question 52, he says: Let whisky and gambling alone, and make expenses a little less than income.

J. M. P., yardman, railroad.—Work by the month; 11 hours constituting a day's work; earn $70 per month. In answer to question 52, he says: The honest fulfillment of all laws, as they exist, especially the Restriction Act, and a moderation of the tariff on some articles.

J. E. E., superintendent of mine, and assayer and mining engineer.—Work by the year, and earn about $46 per week; working underground, 9 hours constitute a day's work, and working on the surface, 10; 30 Chinese work at this place, and 25 white men; Chinese receive $1 25 per day; white labor, $3 to $3 50 per day; am a member of a society, and when sick receive $30 per week.

V. J. E., station agent.—Have been an apprentice over 9 years, and still learning; work by the month, and at present 13½ hours constitute a day's work; earn about $65 and house rent per month; am a member of a benevolent society, and in case of sickness receive $8 per week. In answer to question 45, he says: I suggest, first, more liberal compensations for those who work with hands and heads, coupled with a more discriminating selection and apportionment of the workers; second, sure promotion for faithful service. This would directly benefit the faithful worker, and indirectly the other one, by stimulating him to efforts in the direction of the same benefit.

COST OF LIVING.

The following answers were received to Question 46 of Form "B," sent to employés in the different branches of industry. The question referred to is:

46. If possible give actual (if not, estimated) expenses for the last

twelve months, as follows: For rent, $——; fuel, $——; clothing, $——; groceries, $——; meats, $——; sundries, $——.

Name.	Occupation.	Cost of Living for Twelve Months.					
		Rent.	Fuel.	Clothing.	Groceries.	Meats.	Sundries.
H. C.	Collar maker	$96 00	$30 00	$50 00			$150 charity to fellow workers
J. A. A.	Deck hand	120 00	150 00	$100 00	$150 00	$150 00	100 00
J. L.	Section foreman		30 00	185 00	50 00	101 00	75 00
W. J. S.	Grain weigher	96 00		200 00			700 00
J. F.	Deck hand			150 00			25.00
A. G. W.	Machinist	144 00	80 00	115 00	300 00	72 00	10 00
J. G.	Machinist	84 00	24 00	72 00			192 board, etc.
J. C.	Tinsmith	240 00	30 00	125 00	12 00	100 00	
J. McL.	Trader		40 00	150 00	150 00	50 00	500 00
G. J. G.	Watchman	144 00	50 00	175 00	300 00	150 00	
G. W.	Engineer	192 00	60 00	500 00	460 00	360 00	200 00
De W. C. S.	Journalist	150 00	20 00	150 00	70 00	150 00	
J. M.	Iron molder		50 00	200 00	400 00	100 00	200 00
J. C.	Blacksmith		60 00	250 00	370 00	110 00	100 doctor bills
S. H. E.	Horse-collar maker	90 00	10	100 00	05		1,100 00
M. D.	Fireman	72 00	25 00	120 00	180 00	208 00	305 00
J. E. C.	Calker		40 00	100 00	250 00	100 00	300 00
L. C. G.	Sash, door, and blind maker						75 board and room per m'th
J. C.	Blacksmith		10 00	20 00	200 00	50 00	15 00
R. H. B.	Foreman S. L. Co.		50 00	40 00	400 00	100 00	250 00
E. K. R.	Blacksmith		25 00	100 00	100 00	50 00	385 including tuition, board girl at school
J. W.	Deck hand	120 00	30 00	150 00	300 00	100 00	50 00
T. H. L.	Section foreman		6 00	300 00	180 00		120 board and schooling of children in N. Y., $300
P. J. F.	Iron molder	144 00	12 00	100 00	350 00	120 00	
C. E. B.	Compositor	240 00	50 00	150 00	250 00	200 00	50 00
W. R.	Engineer	180 00	48 00	50 00	300 00		
N. A. F.	Machinist	180 00	25 00	30 00			
R. C.	Boilermaker	96 00	9 00	100 00			548 board for self and 3 boys
F. W.	Brakeman	100 00		175 00			260 for board
K. C.	Steamboat porter	72 00	72 00	90 00	240 00	120 00	6 00
J. J.	Machinist		40 00	200 00	250 00	100 00	200 for insurance and doctor bills.
J. K.	Cigarmaker	50 00		100 00			250 for board
W. C. B.	Clerk	240 00	36 00	200 00	180 00	100 00	
J. J. R.	Farmer		60 00	500 00	300 00	150 00	30 00
Wm. T.	Harness and saddlery	120 00	30 00	150 00	150 00	150 00	100 00
E. McC.	Carpenter and joiner	144 00	50 00	150 00	35 00	14 00	150 for doctor and medicine
G. H. H.	Horse-collar maker	60 00		80 00			140 00
D. McS.	Boot and shoe cutter	192 00	36 00	60 00	318 50	91 00	342 50
J. D.	Lather	96 00	20 00	50 00	48 00	96 00	21 00
B. E.	Varnisher	250 00	50 00	150 00	200 00	100 00	100 00
D. M.	Driller	136 00	50 00		240 00	96 00	
G. Y. B.		600 00	100 00	250 00	300 00	240 00	1,200 00
V. J. E.	Station agent		40 00	200 00	450 00	30 00	50 00

Eggs.

With tea or coffee.		With tea or coffee.	
Corn beef omelette with an egg	15	Three scrambled eggs	25
Three fried eggs	25	Egg omelette (three eggs)	25
Three poached eggs on toast	25	Rum omelette	25
Ham and two eggs	25	Fried salt pork and eggs	25
Three poached eggs	25	Two boiled eggs	20

Hot Rolls, Muffins, etc.

Hot rolls	10	Coffee cake	10
German rolls	10	Jenny Lind cake	10
French rolls	10	Hot American waffles	10
Hot corn cake	10	German pancake, with coffee	25

Hot Cakes and Toast.

Buckwheat cakes	10	Dry toast	10
Flannel cakes	10	Milk toast	10
Corn batter cakes	10	Fried Indian pudding	10
Boston cream toast	15	Crushed Indian	10

Coffee, tea, chocolate, or milk	10	Oat meal mush, cracked wheat, or crushed Indian, with milk	10
Coffee, tea, chocolate, or milk, with rolls or toast	15	Oat meal mush, cracked wheat, or crushed Indian, with cream	15
Coffee, tea, chocolate, or milk, with pie or cake	15		

Entrees.

Yankee buckwheat cakes, with maple syrup	15	Apple fritters	10
Alameda snipe on toast, with tea or coffee	25	Apple sauce	10
One half spring chicken, with tea or coffee	50	Pigs feet in crumbs or batter	10
Cosmopolitan breakfast	25	Boston pork and beans	10
English mutton chop	10	Boston cream toast	10
Home made sausage	10	Chicken liver brochette on toast	10
Fried corn meal mush, with currant jelly	10	Corned beef omelette, mushroom sauce	10
Pork tenderloin, with currant jelly	15	Tenderloin steaks	25
Pork spare rib, apple sauce	15	Quail on toast	25
Kidney, saute a la bordeau	15	Hulled corn and cream	10

Three 10 cent dishes to one person, 25 cents.
Two 10 cent dishes, with a cigar, 25 cents.

POPULAR DINING SALOON, SAN FRANCISCO.

DINNER BILL OF FARE.

Soups.

Scotch barley, Edinburgh style	10	Vegetable	10
Chicken	10	Mutton broth	10
Boullion	10	Rice tomato	10
Oyster	10		

Fish.

Salmon, baked, boiled, or fried	10	Salt codfish, boiled	10
Sea bass, baked, boiled, or fried	10	Mackerel, boiled or broiled	10
Tenderloin of sole	10	Smelts, tomcods, or herring	10

Boiled.

Mutton, caper sauce	10	Corned beef and cabbage	10
Mutton, mint sauce	10	Corned pork and cabbage	10
Cold boiled ham	10	Mutton and turnips	10

Pot of tea or coffee, or glass of milk	10
Chocolate, cup	10

Chicken potpie	25	Breast of lamb breaded	10
Veal potpie	10	Mutton curry and rice	10
Pigs feet soused	1	Veal	10

Roasts.

Beef	10	Chicken, half	50
Veal	10	Chicken, quarter	35
Pork	10	Mutton	10
Turkey	50		

COST OF NECESSARIES.

Retail Prices in San Francisco Compared with Massachusetts and Great Britain.

ARTICLES.	San Francisco.		Massachusetts.		Great Britain.	
	Quantities	Average Retail Prices	Quantities	Average Retail Prices	Quantities	Average Retail Prices
Groceries.						
Flour, wheat, superfine	Pound	$0.025	Pound	$0.041	Pound	$0.036
Flour, wheat, gilt edge	Pound	.03	Pound	.036	Pound	.033
Flour, rye	Pound	.02	Pound	.025	Pound	.022
Corn meal	Pound	.03	Pound	,027	Pound	.018
Codfish, dry	Pound	.08	Pound	.102	Pound	.085
Rice	Pound	.06	Pound	.085	Pound	.056
Beans	Quart	.06	Quart	.113	Quart	.075
Tea, Oolong	Pound	.70	Pound	.539	Pound	.646
Coffee, Rio, green	Pound	.25	Pound	.173	Pound	--------
Coffee, roasted	Pound	.35	Pound	.209	Pound	.354
Sugar, good brown	Pound	.085	Pound	.08	Pound	.06
Sugar, coffee	Pound	.095	Pound	.09	Pound	.066
Sugar, granulated	Pound	.10	Pound	.095	Pound	.078
Molasses	Gallon	1.00	Gallon	.697	Gallon	.576
Syrup	Gallon	.50 to .85	Gallon	.781	Gallon	.708
Soap, common	Pound	.07	Pound	.08	Pound	,058
Starch	Pound	.09	Pound	.107	Pound	.095
Oil, kerosene	Gallon	.20	Gallon	.186	Gallon	.17
Provisions.						
Beef, roasting	Pound	.12 to .15	Pound	.169	Pound	.228
Beef, soup	Pound	.06 to .10	Pound	.079	Pound	.151
Beef, rump steak	Pound	.15 to .20	Pound	.255	Pound	.27
Beef, corned	Pound	.10 to .15	Pound	.105	Pound	.178
Veal, fore quarter	Pound	.08 to .12	Pound	.11	Pound	.206
Veal, hind quarter	Pound	.12 to .18	Pound	.151	Pound	.24
Veal, cutlets	Pound	.15	Pound	.204	Pound	.252
Mutton, fore quarter	Pound	.07 to .08	Pound	.111	Pound	.195
Mutton, leg	Pound	.12 to .15	Pound	.161	Pound	.227
Mutton, chops	Pound	.15 to .18	Pound	.185	Pound	.25
Pork, fresh	Pound	.15 to .18	Pound	.12	Pound	.182
Pork, salted	Pound	.10 to .15	Pound	.118	Pound	.176
Pork, bacon	Pound	.12 to .15	Pound	.17	Pound	.172
Pork, hams, smoked	Pound	.14 to .16	Pound	.15	Pound	.225
Pork, shoulders, corned	Pound	.10 to .15	Pound	.127	Pound	.20
Sausages	Pound	.15 to .20	Pound	.131	Pound	.167
Lard	Pound	.12 to .15	Pound	.124	Pound	.186
Mackerel, pickled	Pound	.10 to .15	Pound	.134	Pound	.07
Butter	Pound	.30	Pound	.302	Pound	.347
Cheese	Pound	.15 to .25	Pound	.145	Pound	.16
Potatoes	100 lbs.	1.00 to 1.50	Bushel	.747	Bushel	.66
Milk	Quart	.10	Quart	.071	Quart	.073
Eggs	Dozen	.20 to .30	Dozen	.36	Dozen	.39
Fuel.						
Coal	Ton	8.00 to 16.00	Bushel	.248	Bushel	.121
Wood, hard	Cord	9.50 to 10.00	Foot	.822	--------	--------

Entrees.

Roast chicken, currant jelly, half	50
Roast chicken, currant jelly, quarter	35
Chicken fricassee a la crême	25
Stewed chicken giblets, family style	10
Roast Spring lamb and green peas	15
Irish stew, Dublin style	10
Baked young veal and peas	10
Beefsteak pie a la popular	10
Stewed Spring lamb and sweet potato	10
Spare rib of Spring lamb and Lima beans	10
Brazed sirloins of beef and celery roots	10
Baked macaroni and cheese a la Genoise	10
Roll of beef and stewed sweet corn	10
Baked breast of Spring lamb and string beans	10
Boiled rump of beef and horseradish	10
Boiled New England dinner	10
Brazed shoulder of lamb and succotash	10
Tenderloin of sole, tartar sauce	10
Boiled fresh codfish, mustard sauce	10

Potato salad free.

Relishes.

Banana fritters	10
Lobster salad	10
Apple fritters	10
Chicken salad	10

Stews.

Brains	10
Kidneys	10
Tripe	10
Veal	10
Mutton	10
Beef	10
Chicken fricassee	25
Stewed chicken	25

Vegetables.

Green corn	10
Green peas	10
String beans	10
Tomatoes	10
Cabbage	10
Onions	10
Spinach	10
Mushrooms	25

Puddings.

Apple sago	10
Apple dumpling	10
Bread	10
Rice	10
Tapioca	10
Plum	10
Bread custard	10
Greengage roll	10
Apple roll	10
Cup custard	10
Corn starch	10
Indian	10

Pies.

Custard	10
Apple	10
Mince	10
Squash	10
Lemon cream	10
Cocoanut cream	10
Hot mince	10
Plum	10
Peach	10
Cranberry	10
Blackberry	10
Strawberry cream	10
Huckleberry	10
Grape	10

Cakes.

Citron	10
Sponge	10
Cream	10
Pound	10
Jelly	10
Jelly roll	10

Dessert.

Stewed huckleberries	10
Stewed prunes	10
New honey	10
Baked apples	10
Stewed plums	10
Peaches and cream	10
Strawberries and cream	10
Raspberries	10
Baked pears	10

Wines.

Table claret, per bottle	25
Table claret, half bottle	10
Extra California	50
St. Julien Medoc	75
White wine, per bottle	25
White wine, half bottle	10
Old sherry	1 50
Port wine	1 00
Champagne, imported, extra, quarts	4 50
Champagne, imported, extra, pints	2 25
Champagne, domestic, quarts	3 00
Champagne, domestic, pints	1 50
Ale, per bottle, pints	25
Porter, per bottle, pints	25
Beer, per glass	10
Bottled beer	10
Schlitz Milwaukee beer	25 and 50
Cantenac Medoc	50
Haut Sauterne	50 and 1 00
Chateau Lafitte	50 and 1 00
Chateau La Rose	50 and 1 00
Sarsaparilla	10
Soda water	10
Russ Cuvee	10
Congress water	10
California ale or porter	15
Ginger ale	10
Best Zinfandel	15 and 30
Vermouth	10
Anisette	10
Absinthe	10
Cider	10

BREAKFAST AND SUPPER.

Cooked to Order.

Quail on toast	25	Fried apples and bacon	10
Family porterhouse	50	Bean omelette	10
Half Spring chicken	50	Mutton cutlets, breaded	10
Porterhouse steak	35	Domestic sausage	10
Rump steak	25	Liver and bacon	10
Sirloin steak	25	Fried brains, plain	10
Tenderloin steak	25	Fried brains in batter	10
Broiled quail	25	Lamb chops	10
Weiner schnitzel and coffee	25	Pigs feet in batter	10
Veal cutlet, plain or breaded	10	Corned beef hash	10
Beef steak, plain	10	Fried smelts	10
Porterhouse of veal	25	Fried tom cod	10
Beef steak, Spanish	10	Salmon, fried or broiled	10
Beef steak and onions	10	Fish balls	10
Mutton chops	10	Mackerel	10
Pork chops	10	Herring, fried or broiled	10
Bacon, fried or broiled	10	Tenderloin of sole	10

Baked pork and beans, with Boston brown bread, 15 cents.
Maple syrup, 5 cents.

Eggs and Oysters.

2 eggs, with tea or coffee	20	3 rum omelette eggs, with tea or coffee	35
3 boiled eggs, with tea or coffee	25	Oysters in batter	25
3 fried eggs, with tea or coffee	25	Oyster fritters	25
Ham and 2 eggs, with tea or coffee	25	Stewed oysters	25
Ham and 3 eggs, with tea or coffee	30	Raw oysters	25
Poached eggs on toast, with tea or coffee	25	Oysters fried in crumbs	35
3 scrambled eggs, with tea or coffee	25	Select Eastern oysters	35
3 omelette eggs, with tea or coffee	25		

Hot Cakes, Muffins, Rolls, etc.

Buckwheat cakes	10	Hot corn bread (morning)	10
Flannel cakes	10	German rolls	10
Milk, dry, or cream toast	10	French rolls	10
Corn batter cakes	10	Jenny Lind cake	10
German pancake, with coffee	25	Coffee cake	10
Doughnuts	10	Hickory bread	10

Cake or pie, with coffee, tea, or chocolate, 15 cents.
Oat meal mush or cracked wheat, with milk, 10 cents.

Entrees.

Fried Spring chicken, with cream sauce	35	Stewed tripe	10
Baked pork and beans and Boston brown bread	10	American waffles	15
Half Spring chicken broiled on toast	50	Scrambled brains, with an egg	15
Fried or broiled rock cod	10	Hamburg steak, with coffee	25
Boneless smelt	10	Stewed kidney	10
Flounders in any style	10	Fried or broiled tripe	10
Corned beef hash and one egg	15	Brains fried plain or in batter	10
Fried calves liver, with bacon	10	German pancakes and coffee	25
Beef kidney broiled on toast	10	Hulled corn in cream	10
Bunker's club house sausage	10	Crushed Indian corn and cream	10
		Ice cream	15

One 15-cent and two 10-cent dishes to one person for 30 cents.

The answers received to Form "C" were eminently unsatisfactory. Some 600 blanks were sent out, from which only the following ten were received:

LABOR ORGANIZATIONS.

Answers to Form C.

Name of Organization.	No.	Located at—	Date of Organization.	Trade.	Meets When.
Harness, Saddle, Collar, and Whipmakers	2,383	San Francisco	Dec., 1882	Harness and saddlery	
Miners' Union		Alleghany, Sierra	Nov., 1883		1st Saturday of each month
Ship Calkers' Association		44 Spear St., S. F.	Oct. 28, 1879		1st Wednesday of each month
Barbers' Protective Union		529 California, S. F.	Jan. 13, 1878	Barber and hairdresser	1st and 3d Tuesdays, each month
Varnishers and Polishers' Union of Cal.		927 Mission, S. F.	April 17, 1882	Varnishing and polishing	1st and 3d Wednesdays, each m'th
Iron Molders' Union	164	San Francisco	Jan. 30, 1867	Iron workers	2d and 4th Wednesdays, each m'th
Brotherhood of Locomotive Engineers	161	909½ Market, S. F.	Aug. 17, 1863	Locomotive engineers	2d and 4th Sundays, each month
Journeyman Tailors' Protective and Benevolent Union		San Francisco	Sept. 21, 1873	Tailors	2d & 4th Thursdays, each month
San José Branch of White Cigarmakers' Association of the Pacific Coast	1	San José	June 23, 1882	Cigar makers	1st Tuesday after 4th of each m'th
San Francisco Typographical Union	21	San Francisco	1872	Newspaper, book, and job printing	Last Sunday of each month

Name of Organization.	No. of Members.	Name of M. W. or President.	Post Office Address.	Is your organization connected with any State, National, or International organization? If so give name of same.	Give Name and Post Office Address of some officer or person connected with each of such other organizations.
Harness, Saddle, Collar, and Whipmakers		Jos. P. Mehn, M. W.	214 Battery Street	Knights of Labor of N. A.	F. Turner, L. B. 71, Philadelphia
Miners' Union	50	G. W. Hildebrand	Alleghany, Sierra, Cal	No	
Ship Calkers' Association	209	Robert L. Delano		No	
Barbers' Protective Union	130	Charles Rimassa	None	No	
Varnishers and Polishers' Union of Cal.	75	James W. Crowe	408 Shipley Street	No	
Iron Molders' Union	250	George Spring	216 Second Street	Iron Molders' Union, N. A.	P. F. Fitzpatrick, Int. President, Lock Box 388, Cincinnati, O.
Brotherhood of Locomotive Engineers	75	Jas. Madden, Ch. En.	S. P. R. R. Shops, San Francisco	B. of L. E.	P. M. Arthur, C. E., Room 5, Blackstone Block, Cleveland, O.
Journeyman Tailors' Protective and Benevolent Union	200	Eric Westine	316 Post Street, S. F.	No	
San José Branch of White Cigarmakers' Association of the Pacific Coast	28	J. W. Barcill	San José, Cal.	White Cigarmakers' Ass'n	
San Francisco Typographical Union	700	Jas. G. Piratsky	San Francisco	Int. Typographical Union	M. L. Crawford, Pres., Chicago, Ill.

As a sort of appendix, I present a series of reports on the condition of the labor market in San Francisco, under date of September, 1884, as made by the committees of Labor Councils:

CONDITION OF THE LABOR MARKET.

As reported by Committee of Labor Council, San Francisco, September, 1884.

PAINTERS.

The city is overstocked with painters who are willing to work for less than the fixed rate of wages. Those who have lived here for any length of time (many of them with families), have remained idle at least half the time since April last. This is not owing to any ill-feeling between employers and workmen, but to the over supply of journeymen, forcing them into competition with each other, to their mutual injury. Not more than fifty in the whole city will save anything this year. This out of one thousand five hundred permanent resident painters is not a good showing.

FREDERICK WARRILOW,
Recording Secretary Painters' Assembly 1903, K. of L.

Frank Nelson, painter, of 931 Market Street, states that he has been in San Francisco twenty-seven years, and never saw the trade so dull as it now is. Not one man in fifty is working. Has not put in a full week's work since July 3. The most work he has had in any one week was three and one half days. Has been entirely idle three weeks. Visits all the shops and knows their condition. Universal idleness from lack of work, prevails. Shops formerly employing forty men now have but five or six.

HARNESS MAKERS.

I am a harness maker of twelve years' experience and practice. I have lived ten years in seven of the Western States, and upwards of two years in California. I find this the hardest State to get a job I have yet been in. In fact, I cannot get any kind of a job at my trade at all, and I am going to return to Kansas in a few days, hoping that the glowing account of the great chances for the toiling masses in California may prove more of a reality to others than it has to myself.

San Francisco, September 10, 1884. J. R. MILLER.

COLLAR MAKERS.

I am a collar maker, employed at Main & Winchester's, and am Secretary of the Harness, Saddle, and Collar Makers' Union. I am constantly in communication with all branches of the trade. The trade is now in a very bad condition. One half of the collar and harness makers are now out of employment, and the other half are working 8 hours in most of the shops of the city.

San Francisco, September 12th. JAMES H. GILLESPIE.

TEAMSTERS.

Have lived forty-two years, and been in twenty-three States and Territories, and I find California the hardest place to get work in I have found in all my travels; besides, men are worked harder here than in any other State of the Union. I have been employed a little over half the time during two years' residence in California. I consider the chances in my business for a man to get a job are about one out of sixteen in good times, but much less now.

PETER CALWELL,
Corner Sixteenth and Guerrero Streets.

FARM LABORERS.

I am a farm laborer. I have followed the business for thirteen years in California, and get work about four months in the year, and work sixteen hours per day for an average of $30 per month. The balance of the time I work for my board, in any way to keep soul and body together. My clothes cost $12 per year on the average. As regards California being a good place for immigrants, I say no. Land and labor are both impossible to procure to afford an existence, unless poor grub, dealt out under a tree, and a large commodious haystack for a bed chamber, constitute the happiness that civilization affords in this great and glorious State.

JAMES JENKINS,
Practical farmer, 38 years old.

City Front Hotel, San Francisco.

PRINTERS.

There are fully one hundred printers out of work at the present time, and as many more that are only able to get work periodically. The outlook for the future is bad. A large number would leave the city if they had means to do so.

E. C. NEWHOFF,
Member of Committee.

BLACKSMITHS, CARRIAGE MAKERS, AND DRAYMEN.

Mr. Charles McArron, member of this committee and carriage maker at 820 Folsom Street, makes the following report of facts gathered from business men in different parts of the city:

House Smiths.—Business very dull, and a great many men idle.

CALVIN NUTTING & SON.

Ship Smiths.—Business never was so dull, or so many men unemployed.

H. CROCKER, 20 Folsom Street.

Carriage Smiths and Truck Makers.—Nothing at all doing.

CHRIS. SHULZ, corner Drum & Commercial Streets.

Business very dull. B. GALLAGHER, Mission Street.

No business doing whatever. T. D. S. LAMAR, 540 Valencia Street.

I make a similar report. C. McARRON, 820 Folsom Street.

Draymen.—Business dull and a great many men idle.

JOHN GORHAM, drives for Tubbs & Co.

Never knew so many men idle. DEXTER, hauls for Blake, Robbins & Co.

All cartmen report business very dull. C. McARRON, 820 Folsom Street.

COOPERS.

Patrick Buckley, cooper, resides at 1410 Harrison Street; has been in San Francisco six years; the trade is now in the slackest condition he has ever known; there is no work of any importance in the shops; the kegs made this season to sell to the farmers for the purpose of packing butter are now on hand, and no market for them. All the work he has done from the first of May to the present time (the middle of September) would not amount to a month. Not one fourth of the coopers are at work. There are coopers in the city who have walked the streets for six months, and have been unable to get a day's work during that time, either at their own trade or at any other employment.

WOOD CARVERS.

There are about seventy-five or eighty wood carvers in the city; of this number there are four or five who have had steady employment since January 1; the rest have worked about half time—some more and some less. Wages have averaged $2 50. I have been out of work eighty-three days since January 1; I am out of work now, with a prospect of remaining so for some time. One cause of the lack of work is the use of zinc cornices on buildings in place of wood. Another cause is the fact that our wealthy people send East for their furniture. The largest jobs have always gone East. There was $60,000 worth of carving done here for the Hopkins house; but that was not half the value of the carving for the house. Stanford's, Flood's, and Crocker's houses were furnished from the East. On ordinary work of the trade, State Prison labor comes in competition.

CHAS. G. RODANER, 2525 Bryant Street.

CITY LABORERS.

Mr. J. H. Gilmore, 102 Kearny Street, a member of this committee, on applying to a Laborers' Union for information in regard to the condition of labor, received an official reply to the effect that in a Union comprising three hundred members the average amount of work they were able to obtain, taking the year through, was three days per week.

In presiding over a society, and calling the roll to ascertain the number of unemployed members, Mr. Gilmore found that nearly one third were in the country looking for work.

D. McCarty, grainer, 456 Tehama Street, reports to Mr. Gilmore that there are a large number of unemployed workmen in his trade.

Car drivers report sixteen hours work per day for $2 25, and multitudes of applicants willing to work for nothing till they can get an appointment.

BRICKLAYERS.

Rate of wages paid per diem, $4 to $5; per month, $45 to $75; per year, $500 to $650. This branch of industry is one of the best paid per diem. But after a thorough local canvass of the actual condition of the craft, we find the supply of labor to be one third in excess of the demand. Two hundred and forty bricklayers in the city; fifteen hundred per day average bricks; five months in the year out of twelve—five twelfths time average; forty-five million bricks used; nine hours per day constitute a day's work. Molders—Six hundred in the city; $2 50 to $3 50 per day; two thirds unemployed.

CHAPTER VII.

CONVICT LABOR.

Before commencing the transcript of the evidence taken before me upon the momentous question of convict labor, I am convinced that it would not be a waste of time to devote a few lines in reviewing what has been done by the Legislature in the matter.

In Article 10 of the new Constitution, ratified by a vote of the people on the seventh day of May, 1879, Section 6 provided that: "After the first day of January, 1882, the labor of convicts shall not be let out by contract to any person, copartnership, company, or corporation, and the Legislature shall by law provide for the working of convicts for the benefit of the State."

In consonance with this section of the Constitution, an Act was passed at the legislative session of 1880, entitled "An Act to define, regulate, and govern the State Prisons of California." Section 25 of that Act simply followed the dictation of the constitutional provision, but even at the risk of repetition it may be given:

> Section 25. After the first day of January, 1882, the labor of convicts shall not be let out by contract to any person, copartnership, company, or corporation by the State Board of Prison Directors, nor shall they let out any such labor prior to January 1, 1882, by contract extending beyond such date; *provided*, that after the passage of this Act, no skilled convict labor shall be let or contracted out at a price less than one dollar per day for each convict; *provided further*, that this section shall not apply to contracts heretofore entered into.

Only one other section of the Act in question referred to the labor of convicts. It ran as follows:

> Section 21. All convicts not employed on contracts may be employed by authority of the Board of Directors, under charge of the Wardens and such skilled foremen as he may deem necessary in the performance of work for the State, or in the manufacture of any article or articles which, in the opinion of the Board, may inure to the best interests of the State; and the Board of Directors are hereby authorized to purchase, from time to time, such tools, machinery, and materials, and to direct the employment of such skilled foremen as may be necessary to carry out the provisions of this section, and to dispose of the articles manufactured and not needed by the State, for cash, at public auction, or otherwise. If by auction, after having first given notice of such sale by advertising the time and place thereof, together with a list of the articles to be sold, in ten consecutive issues of two or more daily newspapers of general circulation published in the City and County of San Francisco. The money received from the sale of all articles so sold shall be paid into the State Treasury by the Warden of the Prison, to the credit of the fund of said prison.

Lastly, a portion of Section 23 referred to the matter in the following language:

> A Board of State Prison Directors of this State shall require of every able-bodied convict confined in a State Prison as many hours of faithful labor, in each and every day during his term of imprisonment, as shall be prescribed by the rules and regulations of the prison.

The above extracts make up the total of the legislative provisions concerning convict labor, and with all deference to the framers of the law, it must be confessed that it only furnishes an indication of what should be done, and it has been found—as the subjoined testimony will show—very malleable material in the hands of a few interested parties. There can be no doubt that it was the intention of those who put the new Constitution together, and of those who legislated upon it, to abolish convict contract labor, and to establish something better in its stead. There can be no doubt, either, that this result has not been attained, and that the old evils have been perpetuated, although under a new name. That the following pages will fully prove this, I am confident. Such deductions and recommendations as are to be drawn and made must, however, be presented later on, and I shall close these prefatory remarks by quoting the subdivision of Section 3 of the "Act to support and establish a Bureau of Labor Statistics," which empowers me, as its Commissioner, to gather and present the information here given. The words of the Act run as follows:

SECTION 3. The duties of the Commissioner shall be to collect, assort, systematize, and present * * * statistical details relating to * * *

Eleventh—The number, condition, and nature of the employment of the inmates of the State Prison, and to what extent their employment comes in competition with the labor of mechanics, artisans, and laborers outside of these institutions.

Just prior to entering upon the investigation, I thought it well to secure the opinion of the Attorney-General upon the subject of convict labor, and accordingly wrote him, the following correspondence being the result:

OFFICE OF THE STATE BUREAU OF LABOR STATISTICS, SAN FRANCISCO, March 14, 1884.

Honorable Ed. Marshall, Attorney-General, State of California:

DEAR SIR: In compliance with the request of Hon. Jno. P. Dunn, State Controller, we forward to you copies of the propositions of J. C. Johnson and Company, and the California Furniture Manufacturing Company, accepted by the Board of State Prison Directors February 26, 1884. It is the immediate purpose of this office to institute an investigation into the contract system entered into between the Board of State Prison Directors and any and all parties for the use of convict labor. This investigation will be prosecuted under authority of an "Act establishing a Bureau of Labor Statistics," approved March 3, 1883. Any other information we may possess is at your disposal.

Yours respectfully,
JOHN S. ENOS, Commissioner.

OFFICE OF THE STATE BUREAU OF LABOR STATISTICS, SAN FRANCISCO, March 25, 1884.

Hon. E. C. Marshall, Attorney-General of California:

DEAR SIR: On March 14, 1884, I had forwarded to your address copies of what is supposed to be contracts entered into between the State Board of Prison Directors and J. C. Johnson and Company, and also the California Furniture Manufacturing Company, which was accepted by them February 26, 1884. Will you be kind enough to forward to this office an opinion, as Attorney-General of this State, as to the legality of the action of the State Board of Prison Directors in accepting the propositions of the parties aforementioned. I most respectfully call your attention to Section 6, Article X, of the Constitution; also, to Sections 21 and 25, of "An Act to define, regulate, and govern the State Prisons of California," approved April 15, 1880.

Yours respectfully,
JOHN S. ENOS, Commissioner.

OFFICE OF THE ATTORNEY-GENERAL OF THE STATE OF CALIFORNIA,
SACRAMENTO, March 27, 1884.

Hon. John S. Enos:

DEAR SIR: Your favor of the twenty-fifth instant received. Instead of the opinion which you desire, I will furnish you with a copy of a letter I addressed to the Board of State Prison

Directors. This, I cannot do, however, before Saturday next, since the copy is in my office at San Francisco.

Hoping this will be agreeable to you, I am very truly yours,

E. C. MARSHALL, Attorney-General.

Office of the Attorney-General of the State of California,
San Francisco, March 14, 1884.

Hon. John Boggs, President of the Board of State Prison Directors:

Dear Sir: A committee from the "Knights of Labor" and several employés of important industries have represented to this office that a policy is being pursued by the Board which is not merely unfriendly to them, but already seriously injurious, and clearly in violation of the spirit of the Constitution and the policy of the Democratic party. It is stated that contracts are made with manufacturing and other firms in the City of San Francisco, by which material is furnished to the prison to be worked up by convict labor and the finished product returned to the contractors, at a price agreed upon, without competition. This must, to some extent, and does, I am assured by workmen, to a very disastrous extent, affect the labor market in those articles so produced, and gives control of wages to those controlling the convict labor. It is, in fact, as they allege, a persistence in the old contract system prohibited by the new Constitution. You will remember that one (and a grave one) of the charges brought against your predecessors in office was precisely this policy, the only difference being that under the old Board the machinery was furnished by the contractors as well as the material. Now, I understand the practice at present is in effect the same as the old and open to the same objections. In the policy of the State, as to penal institutions, the *profit* on convict labor is the last matter considered. First, the safety of the people; second, the reformation of the criminal; and last and incidentally, the profitable application of the labor involved in carrying out the primary objects of all penal legislation. I understand the purpose of Section 6, of Article X, of the Constitution, to be to prevent competition between convict and free labor, and that the Legislature is charged with the duty of providing for "convict labor for the benefit of the State," subject always to the principle above stated. Doubtless the attention of the Legislature will be called to this subject at an early day. It is at present badly or not at all regulated, but the Constitution is itself clearly prohibitory of the course now being pursued, and enlightened humanity recoils at the enormity of competition (already amounting to disguised war between *free* laborers) being exasperated by the introduction of convict labor. It is a blind and vile economy, and every dollar of profit realized from convict labor at the expense of employment or lower wages to the free laborer is, when thoughtfully considered, a hundredfold loss to civilization. I understand in the shop of Main & Winchester a very serious reduction of men employed has taken place and wages are threatened. The California Manufacturing Company and J. P. Johnson & Co., and, as I am informed, many others, are seeking contracts which I cannot but look upon as direct infringements of Section 6, of Article X, of the Constitution.

I beg to hear from you on this subject, and sincerely hoping that there may be no irreconcilable difference of opinion upon a question of growing importance, I am, respectfully,

E. C. MARSHALL, Attorney-General.

It is presumed there was a reply by Mr. Boggs to this letter of Mr. Marshall, but it has never come into my possession, nor is it pertinent here, since the object of the correspondence is but to show how the Attorney-General stood on the question.

On the twenty-sixth of March, 1884, some fifty subpœnas having been served on all those who were supposed to be able to furnish the requisite information upon the matter to be inquired into, the investigation was commenced in the bureau rooms by the delivery of the following opening statement made by the Commissioner, Mr. Enos:

Mr. Enos: Under Section 3, Subdivision 11, of an Act to support and establish a Bureau of Labor Statistics, it is made the duty of the Commissioner of this bureau to ascertain the number, condition, and nature of the employments of the inmates of the State Prisons, county jails, and reformatory institutions, and to what extent their employment comes in competition with the labor of mechanics, artisans, and laborers, outside of these institutions. That is one of the duties assigned to this office, which it becomes my duty to investigate, and by virtue of that provision in the law, I am now commencing my examination on that subject. Under Article X, Section 6, of the Constitution of this State, after the first day of January, 1882, the labor of convicts shall not be let by contract to any person, copartnership, company, or corporation, and the Legislature shall by law provide for the working of convicts for the benefit of the State. Now, under that provision of the Constitution, the Legislature, by an Act to define, regulate, and govern the State Prisons of California, approved April 15, 1880, passed a law, of which Section 21, Section

23, and Section 25, bear upon that subject. [Reads Sections 21, 23, and 25.] Those are the sections that bear upon this question. Now, we notified the State Prison authorities of San Quentin to furnish us copies of proposals which they have entered into or which they have entertained, with different manufacturing establishments. They have furnished this office with two copies, and I take it for granted those are only two of the contracts, and we have written for further information. One is a contract, or a proposal, whatever they may call it, which is made by the California Furniture Manufacturing Company. [Reads copy of contract with the California Furniture Company.] They furnished us that, and then they furnished us also a proposition—copy of proposition made to J. C. Johnson & Co., in relation to the tanning of hides. [Reads proposition made to J. C. Johnson & Co.] Now I make this statement to show what has been done for the purpose of instituting this investigation, and I will say, briefly, that I am anxious to hear both sides; that this question has been thoroughly ventilated in many of the Eastern States—New Jersey, Ohio, New York, and most of the Eastern States; for instance, in Massachusetts, as early as 1878, the Legislature passed a resolution, which is as follows, upon this question: [Reads.]

"*Resolved*, That the Bureau of Statistics of Labor is hereby authorized to make a full investigation as to the kind and amount of work performed at the penal institutions of this State, and as to all facts pertaining to the same, and to recommend such legislation as is advisable, to prevent competition between said labor and other industries of this State, and report the same to the next General Assembly."

In New York the question of convict labor was agitated by the people, so much so that the Legislature submitted to the people last Fall whether they would do away with convict labor, and on a vote of 673,000—the largest vote ever cast for an amendment—they gave a majority of 138,000 for the abolition of contracting convict labor. So it is no new question, and it is one, I think, very properly we should investigate.

The testimony was all taken in shorthand, and when written out proved to be such a mass of matter that if printed in full it would make a volume almost equaling in bulk a fat "Congressional Record." Accordingly, I have gone all over it again and prepared in most cases synopses, which even now will be found to fill many pages. The sessions, too, were interrupted, and the witnesses represented divers industries, so that it has also been necessary to segregate these under the following heads: Leather, harness, and saddlery, etc.; furniture; door, sash, and window blinds; stonecutting, brick-making, and jute and bagging, in which order the subjects will be presented:

LEATHER, HARNESS, AND SADDLERY.

Patrick F. Robinson testified that he has been a resident of San Francisco for seven years, is a collar and harness maker, and has worked at the business twenty-eight years, having served an apprenticeship. Have worked for Main & Winchester, and also with the firm of J. C. Johnson & Company, but have now a business of my own. When he came to this State first he went in the employ of Mr. Johnson, whose business was on Jackson Street. They had some Chinese at work in the collar department with me; they were working on Boston team collars. At this time Mr. Stone had the contract of the prison labor, and Mr. Johnson thought that prison labor was far cheaper than manufacturing in Jackson Street, and so he quit the business on Jackson Street. At that time Mike Sennet, Thos. Gregory, and I, were thrown out of employment, and I was eleven weeks out of employment through prison labor, and had a family of seven to support. After eleven weeks I got work with Main & Winchester, and worked there until I started a business of my own. But the fact is, we can't compete with prison labor. Mr. Johnson took a contract with the State Prison authorities about four or five years ago and had it until the new Constitution came in force. That convict labor in the State of California is bad for the harness business chiefly. He has to buy convict made collars because he can buy them cheaper than he can manufacture them. In my opinion for Boston team collars was paid fifteen dollars for a dozen in the East. I believe they make them here with convict labor for five dollars a dozen, or even less. I suppose they make them far cheaper here, and they have to try and compete with the State Prison labor. Ninety prisoners working on collars would supply the collar market of California.

William Davis, a saddler doing business in San Francisco seven years, testified as follows: That convict labor is demoralizing to young people that are trying to learn the trade. Have between fifteen and twenty apprentice boys learning the trade. The apprentices get discouraged at the prospect of competing with prison labor. We are compelled to cut down the price of labor by reason of convict work being employed in our business. Convict labor interferes with my trade from fifteen to twenty per cent less than a fair profit. It affects the laborers' wages directly; we have to cut their wages down in proportion to the prices we are getting; $3 to $3 50 is a fair day's wages for collar-makers. Competition with convict labor in my business has compelled me to discharge men and employ boys, or else Chinamen. Convict labor in my business has lessened the price of mechanics' wages from twenty to twenty-five per cent. It drives skilled mechanics out of the business, and deters the young from learning the trade. The convicts employed can furnish the State with all the collars required, if they let half the force loose on collars.

Cal. Ewing, a collar-maker, and a resident of San Francisco, testified as follows: Served an apprenticeship to learn my trade; am now foreman in Main & Winchester's, one of the largest manufactories of harness and collars in the State of California. The wages of collar-makers are not within forty per cent of what they should be, or what they would be were it not for the production of that class of goods by convict labor. The employment of convict labor in our business has cut down wages forty per cent. Mechanics cannot live and support their families and compete with convict labor. I think that fifty per cent of the collar-makers and thirty per cent of the harness-makers are idle through the competition of convict labor. In our business good mechanics should receive from $3 50 to $4 per day. I have been District Master Workman of the Knights of Labor. A mechanic should receive $1 for making a good collar. He can make from $3 to $4 a day.

Malachi Kean, foreman of saddle and harness department in Main & Winchester's for eighteen years, testified as follows: Convict labor has depreciated the price of collars thirty or forty per cent. If convict labor was not employed in the collar and harness business the demand for skilled laborers would be increased. I believe that convicts could more profitably be employed in working the stone quarries of the State, and not putting them to work at mechanical trades.

Jacob C. Johnson, a resident of San Francisco, testified as follows: Am in the saddlery and harness business, and have been in that business, in this city, for thirty-one and one half years. We have at present forty men in our employ, but we are running rather light now on account of general depression in business. Convict labor in my business does not make much difference to the trade. I think aside from the jute business the number of prisoners engaged in manufacturing would be like a drop of water in the Bay of San Francisco. We are having work done by prison labor. The prison authorities requested us to make them a proposition what we would give them to make these different articles mentioned in the accompanying proposition:

San Quentin, January 7, 1884.

Gregory P. Hart, Esq.:

Dear Sir: Messrs. J. C. Johnson & Company requested me to inform you that should his proposition with regard to the collar and harness department be acceptable to the Warden, he will stock the tannery with hides and material for tanning them at the following price for tanning and finishing with convict labor, he paying for free labor: Collar leather, 28 cents per side; alum leather, 25 cents per side; skirting, 34 cents per side; harness leather, 46 cents per side; putting pickled sheep skins through gambier, $1 per 100.

Yours respectfully,
D. SUTHERLAND.

They are making goods for us according to the annexed proposition. Some of the goods made by prison labor are just as good as those made by free skilled labor, and some are not; we have to sell them at a discount, because they are not perfect, and the result is that the labor costs fully as much as free labor. I believe it would be foolish to maintain convicts in idleness. I would like to see them digging down Telegraph Hill. We don't hire our skilled free laborers less than $2 50 or $3 per day, and a good many of our men are making $4 per day; some $3 50; and the ordinary mechanic $2 50 per day. In New York and New Jersey the harness and collar-makers earn from $2 to $2 10 per day. A mechanic making "Boston team collars," at $7 24, can make $15 per week, working ten hours per day. A fair compensation for a mechanic per day is $2 50 to $3.

J. H. Wilson, a resident of California since 1850, testified as follows: Am a harness maker, formerly in the collar business. Convict labor employed in making collars and harness has a depressing effect upon the business. Prison work is not as good as free labor. I am now paying $6 for making a set of harness; in 1875 paid $7 50. A fair price for free labor in making "Boston team collars" is $7 50 per dozen. A fair price for skilled labor in the harness business is $3 per day.

William W. Main testified that he is Superintendent of Main & Winchester's saddle-tree factory. Have been engaged in the business, on and off, for the past thirty years. Have been working for Main & Winchester, and have had a business of my own. Convict labor, in making harnesses, saddles, and collars, keeps a great many young men and boys out of employment; there being no show for competing with convict labor. We pay our mechanics from $2 25 to $2 50 per day in the collar business. I would put the convicts at work in the stone quarries for the State.

Joseph P. Mehn, a collar maker since 1872, testified as follows: Served as an apprentice in learning the trade. For making Boston team collars we get 62½ cents apiece or $7 a dozen—that is for stuffing—and $13 a dozen is what it should be. To take leather and make it up into collars is worth $13 a dozen. A fair price for Boston team collars made by free labor is $32 to $33 per dozen. The collars made by convict labor are sold for $24 per dozen. Owing to convict labor in this business, I have been deprived of work for three seasons. Wages have been cut down from twenty to twenty-five per cent. Manufacturers of harness and collars made by free labor cannot compete with the manufacture of harness and collars made by convict labor. I would not employ the convicts to compete with the mechanics who are good citizens.

John R. Brown resides at Benicia; business, tanning for the last eighteen years; employ between thirty and forty men. Convict labor employed in tanning leather interferes with our business, and cuts the prices down from thirty-three to fifty per cent. The following comparisons of cost will show the injurious effects of convict labor upon the free labor employed in tanning leather. The cost of free labor per side for tanning skirting leather is 71 cents, which includes insurance, taxes, and repairs in the business. The work is done by convict labor for 34 cents per side. The cost of labor for making collar leather is 51 cents per side; add insurance, taxes, and repairs, 20 cents more, making a total of 71 cents. It costs the contractor 28 cents per side when labor is performed by convicts. Labor on alum tanned leather per side, 35 cents. Add to the above 35 cents 17 cents for taxes, insurance, and repairs, and you have the actual cost per side, 52 cents. Cost per side by convict labor, 25 cents. Cost per side for tanning harness leather, 66 cents. Add expenses for insurance, interest, taxes, and repairs, 20 cents, and you have the actual cost per side, 86 cents; the same work costing the contractors, when performed by convicts, 46 cents per side.

James R. Russell, a tanner doing business in San Francisco, testified that the wages of a tanner is low enough as it is, being $15 to $18 per week, and that he would not be able to compete with convict labor any more than with Chinese. He thought that the proper field for convict labor was a farm, on which the State prisoners could raise enough to support themselves and perform a class of work that would not interfere with free labor; the land to be set apart by the State. He thought there was quite *enough* competition among tanners without the prison entering as a competitor, and was sure that convict labor unnecessarily lowered the price of goods.

William Cosbie, a harness and collar maker doing business in San Francisco for twenty-one years, testified as follows: In 1863 skilled mechanics were making $3 to $5 per day at my trade. At that time "Boston team collars" were sold from $36 to $42 per dozen; they are now selling the same collar for $20 to $24 per dozen. I was compelled to abandon the making of collars owing to the competition of Chinese and convict labor. No manufacturer who employs free skilled labor at fair living wages can compete with one whose goods are manufactured by prison labor. The convicts should be worked by the State upon State work, such as building wharves; getting out stone from quarries. Their work should not conflict with the mechanical industries of the State. Harness makers receive $2 to $2 50 per day.

Frank McAleer, a tanner doing business in San Francisco for sixteen years, testified as follows: Employ sometimes twenty men; convict labor in tanning leather is injurious to the business. The State furnishes buildings, water, etc., that we have to pay for. The leather manufactured by prison labor is inferior in quality and the manufacture of the same lowers the wages of free white labor, and the outside manufacturers are not able to carry on the business so extensively, and it also throws out of employment a great many skilled white laborers. A good mechanic in our business should receive $3 per day; convict labor receives from 40 to 50 cents per day. We cannot make the goods for the same price as those made by prison labor. Collar leather is tanned by prison labor for 28 cents per side; it costs me over 60 cents per side. Alum leather is tanned per side by convict labor for 25 cents; it costs me 60 cents. Harness leather is tanned for 46 cents per side by convict labor; it costs me 70 cents per side. Convicts should not be employed in mechanical pursuits to the detriment of the free white laborer. The employment of three hundred or four hundred convicts in tanning leather would produce one half of all the leather tanned in this State.

John S. Wilson, a saddle and harness maker, doing business in San Francisco for fifteen years, testified as follows: Have been in the employ of Main & Winchester, and now in the employ of J. C. Johnson. Prison labor engaged in making harness comes in competition with the outside manufacturers twenty-five per cent. I mean to say it lowers the price of free labor twenty-five per cent. Mechanics in our business should receive $3 per day. A great many are now working for $2, and some are out of employment.

Austin Joseph O'Malley, a harness and collar maker, doing business in San Francisco, testified as follows: Worked at San Quentin Prison for Mr. Stone (from 1877 to 1880) as foreman of the collar and harness department, and then I was employed by the State, in the same capacity, until the second of February of the present year. I had about forty men in my employ then. The work was done under the contract system, and the State was receiving 50 cents a day for the convict labor. These forty men were employed about a year. After that, Mr. Stone, through my persuasions, withdrew the harness business from there, and reduced the force to about twenty-two men, owing to the inferior make of the harness. This was the cause of the withdrawal of the harness business from there. Convict labor in the manufacture of collars and harnesses is demoralizing to the outside trade, to some extent. Goods manufactured by free labor cannot compete with goods manufactured by convict labor. My remedy for convict labor competition would be, to have monthly sales, and sell the goods to the highest bidder at auction. I think this would have the effect to raise the price of goods, so that free labor would get fair compensation in competing with convict labor. All the work in the harness and collar business is done by hand, as hand work is better. When I was foreman I had exclusive charge of that branch of business (that is, the collar and harness department), and gave directions to the convicts; and also received orders from the Warden. Not one in a hundred of the convicts at San Quentin are good mechanics.

FURNITURE.

Nathaniel P. Cole, thirty-two years in the furniture business, testified that he was the President of the California Furniture Manufacturing Company, and that his company's connection with the State Prison labor of this State dated back to a contract in 1871, when Haight was Governor of the State, having worked 200 men in San Quentin on the first of January of that year, and running them up to the fire of February, 1876. The first contract was for six years, expiring in 1877, the fire leaving them with ten months yet to run. Temporary buildings were constructed, 100 men put to work until the mill was up, when a new contract was entered into with Governor Irwin. The terms of both contracts was that the company should pay the convicts forty cents a day, the company putting in the machinery and the State supplying the motive power, including engine, shafting, and pulleys. The second contract expired during Governor Perkins' administration. At its expiration no new contract was had; and the law of April 15, 1880, which provided that no skilled convict labor should be let out for less than $1 per day, Mr. Cole testified he took this to mean men who had worked one year, and on pressure admitted that out of all the men employed there were "probably" about twenty whom he considered to come under the $1 per diem head. From a conversation with Judge Ames, Mr. Cole gathered that the law would be construed favorably to the company, and he put in lumber again and went along under that expectation. The Directors, however, made a demand for the $1 a day payment, and rather than do this the company sold the State the machinery, selling it on the lease, the State to pay it off in rent instead of making a regular purchase. The company then stopped the mill at the request of the Directors, and on the first of January, 1882, inventoried everything and charged it to the State. The State commenced making goods, took orders where they had the opportunity, says Mr. Cole, but substantially the California Furniture Manufacturing Company took the product, paying from three to four thousand dollars a month, less the $500 installment on machinery. This continued until November, 1883, when Mr. Hart (clerk to the Warden) came to him, as the Warden's representative, and asked that a new arrangement might be made. After much talk, the following proposition was made and accepted:

San Francisco, February 20, 1884.

Hon. Paul Shirley, Warden California State Prison, San Quentin:

We hand you herewith the proposition of the California Furniture Manufacturing Company:

To take the entire production of one hundred and fifty men and run the furniture department to its fullest capacity, on the following conditions:

1. Inventory the stock on hand and charge the California Furniture Manufacturing Company in memorandum the value of same—valued at cost at San Quentin.
2. Inventory unpaid bills due by furniture department, which the California Manufacturing Company will supply funds to pay, and deduct from total of stock inventory. Not to exceed in amount $2,000.
3. Arrange a schedule of prices per piece, which shall be mutually satisfactory as covering the value of labor of engine, machinery, prisoners, etc.
4. The California Furniture Manufacturing Company to buy all needed stock after date of agreement, and keep the stock account equal in quantity and value to present quantity and value.
5. The California Furniture Manufacturing Company to assume and pay all free labor done in furniture department.
6. The agreement entered into to continue until June 30, 1885, and to continue thereafter if mutually satisfactory. At the termination of the agreement the lumber and material on hand shall be returned to the State of California at cost, and the memorandum account canceled. The State to pay the California Furniture Manufacturing Company any excess in value, if any, over memorandum value, and the California Furniture Manufacturing Company to make good any deficiency, if any, from said value.
7. The California Furniture Manufacturing Company to keep all the machinery and tools in good order and repair, excepting shafting, belting, and pulleys.
8. The State to pay all the over work allowances, provided same are upon agreed tasks.
9. The foreman to be allowed one day each week to visit the city for the purpose of getting orders and purchasing material.
10. The price per piece, set, or dozen, to be arranged to mutual satisfaction on all patterns now made. In fixing value of work on goods, especially ordered, the price shall be arranged by Warden to the satisfaction of California Furniture Manufacturing Company.
11. The California Furniture Company agree, as a condition precedent, that they will take the work of 150 prisoners kept constantly employed, provided that a satisfactory price shall be agreed upon with the Warden for the production of new patterns, price of new patterns to be based on the price of corresponding patterns on agreed list, or to be proportioned relatively.
12. The State and the California Furniture Manufacturing Company shall each furnish a man to take the inventory of material on hand. In case of any disagreement, the two shall call in a third party to decide.
13. After the inventory is made in full, the California Furniture Manufacturing Company to pay the State in cash any balance over the sum nearest total divisable by $5,000.
14. The California Furniture Manufacturing Company to carry insurance up to seventy-five per cent of value on stock, to cover possible loss to State, of the amount of investment on account of State. Policies to be made payable to Paul Shirley, Warden.

15. The California Furniture Manufacturing Company to have control and free use of all machinery, tools, patterns, wagons, sheds, etc., pertaining to the furniture department.

CALIFORNIA FURNITURE MANUFACTURING COMPANY.
By N. P. COLE, President.

That agreement is still in force, although Mr. Cole claimed that he has proposed it should end with the present year. In explanation of the document the witness testified that the company furnished all the material, paid for the labor, and took the product. The two thousand dollars which the company agree to pay was a computation of the debts which the prison had incurred by the purchase of material, and which debt the company assumed when it took the material. The company keeps the stock of lumber intact and pays so much per piece for the articles made. When Mr. Cole's attention was directed to the absence of a schedule of prices he said that none such existed and that the price of the articles was subject to a mutual agreement between the company and the Warden; that is, the company works one hundred and fifty men, takes the product, and pays a mutually satisfactory price. He further testified that the parties to this agreement were the Warden for the State and the foreman for the company. Several questions were put upon this absence of prices, Mr. Cole finally saying that the probability was that the foreman knew all about it. On the subject of the foreman, Mr. Cole's testimony is so involved that it must be reproduced:

Question—Now, who supplies the foremen? Answer—The Warden appoints the foremen, and the State pays them, but come to us for the funds at the end of the month for what they pay for free men.

Q.—Your foreman then pays for the free labor? A.—Eventually; yes, sir.

Q.—Who controls the men? A.—What men?

Q.—Who controls the 200 or 150 men that do this work; who controls them when they are working; who oversees? A.—The appointment is to be by the Warden.

Q.—Under whose supervision and control is this work done—your company or the State? A.—Well, that is a question.

Q.—In other words, the direct supervision is subjected to the examination of a foreman? A.—Yes, sir.

Q.—And he is in your employment? A.—We pay him.

Q.—You pay the money? A.—We pay the money virtually.

Q.—Do you select—is it at your company's suggestion that the foreman is put in charge? A.—Yes, sir. I tell you frankly, that I wouldn't run that one moment without I could have that much control of it.

Upon the question of how much the State received per man under this arrangement Mr. Cole had nothing to say. The character of the work done by the convicts, as compared with that done by free labor, Mr. Cole said was equally good up to a certain point, but only medium and cheap work was attempted. He claimed, too, that the work done by the convicts merely supplemented the imported goods, and that the company was paying a good deal more for free than for convict labor. As to the amount done, the company estimated that the product from two hundred convicts was equivalent to that of seventy-five free men. This he took it to be because the prison could never manage as closely as an individual, and he doubted if the State could ever make the prison self-supporting. Mr. Cole's idea was that the best plan would be to turn the prison into a vast chair-making establishment, since he thought that there was a market and the only competition would be with the East. The general average of wages paid by the company was $3 per day for skilled men and $2 50 to porters. The number of furniture makers on the coast he put down at three thousand.

E. H. Kittredge testified as follows: Am a manufacturer of sash, doors, and blinds, etc., and am connected with the California Sash, Door, and Blind Company, doing business in San Francisco for eight years. Have a contract with the State Prison authorities to work convicts in manufacturing sash, doors, blinds, etc., since January, 1881, or 1882. Prior to that we employed the prisoners and paid the State per day 50 cents, we furnishing the machinery and materials, and employed about two hundred convicts. This continued until the new Constitution went into effect; then we entered into another agreement with the Board of Prison Directors, by which we were to furnish the material and machinery and the State made our goods for so much a piece. The State pays the foreman, whom we selected when first we had work done by prison labor, and they have kept him ever since. The convicts are under his supervision. In my branch of business, I don't think convict labor affects the price of free labor. The goods manufactured by convict labor is as good as that made by free labor, all being done by machinery. Two thirds of all our goods are made by convict labor. We pay the State about $4,000 a month. Mechanics in our business should receive at least $2 25 to $2 50 per day. Under the present system, convict labor is about 40 to 50 cents per day. I know of no Chinese being employed in our branch of business.

Henry Ricke, a cabinet maker, testified as follows: Served three years as an apprentice in Germany. Worked at my trade for twenty-one years. Have carried on the business, but most of the time have been employed. I was foreman over the convicts at San Quentin for N. P. Cole & Co. in the manufacture of furniture. They worked about two hundred and fifty convicts. The competition of convict labor with the mechanics and the industries of the State is detrimental. It has reduced the price of free labor about one half. The price formerly paid to cabinet makers in this State was $3 to $4 per day; the wages at present are from 40 to 50 per cent less, and then not steady employment. If it were not for the competition of convict labor in my branch of business, two thirds of the mechanics now out of employment would be employed. The wages received for convict labor is from 40 to 50 cents per day. Mechanics in my business should receive from $3 to $4 per day. There are a good many cabinet makers thrown out of employment owing to convict labor. Would not work convicts in any branch of business in which skilled labor is employed.

Edward Riley, a collar maker since 1868, testified as follows: Served three years as an apprentice, and have worked at my trade for twenty years in San Francisco. Wages were formerly $3 50 per day, now they average $2 50 per day. Ten hours constitute a day's work. A large number of collar makers are out of employment, owing to the competition of convict labor in our business. Convict labor has injured our business thirty to forty per cent. I have seen collars made by convicts sold at $15 per dozen. The same work made by free mechanics should be sold from $27 to $30 per dozen. The State should work the convicts at manual labor, and the price paid upon the goods manufactured should be the same as it costs free labor to manufacture them.

L. C. Granpner, being called, testified as follows:

By Mr. Enos: Your name, residence, and business? Answer—L. C. Granpner, Red Bluff, California, manufacturer of sash, doors, blinds, etc.

Q.—How long have you been in the business? A.—Fifteen years.

Q.—How many hands do you employ? A.—One hundred and twenty-five maximum and seventy minimum.

Q.—What do you pay for skilled labor? A.—From $2 75 to $4 per day.

Q.—What are the wages of boys and cheap labor? A.—$0 75 to $2 75 per day.

Q.—What were the productions in your factory in 1883? A.—Doors, 64,209; sash, 40,0[illegible], blinds, 3,863; and transoms, 5,727. If a man brought lumber to me as they do in State Prisons, each door would be ready for market at a cost of 55 cents, all the labor on the door, sashes 10 and 11 cents, blinds 50 cents, transoms 7 cents. Their maximum 55 cents, my average 55 cents, my minimum 30 cents, theirs 20 cents. The effect of convict labor gives the State or contractor such an advantage as to crush out private enterprise. Cannot compete with the contractors. Manufacturers generally agree as to a fair price for goods they manufacture. Convict labor has cut down prices to such an extent that we don't know what the future may bring forth. Believe that there are three hundred convicts employed in my business within the prison. Such a number of convicts would produce, actually, twenty-five per cent of all the doors manufactured in the State. A skilled mechanic should receive at least $2 50 per day. Any system calculated to reduce such a price necessarily becomes a detriment to the mechanics of the State. Convicts should be employed, but not in mechanical pursuits. No convict learns a trade in prison. He simply becomes a machine himself. He may be in the peg department of the shoe department. He simply learns all about the pegs, but knows nothing at all about the shoe. I believe that nobody, only the contractor, or those who secure the products of their labor at reduced rates, enjoys the benefit of it, and that on the basis of reformation he is not any better prepared to enter the social circle than before he entered prison. I think that they might be employed in making brick, as that industry is now controlled by the Chinese almost exclusively. I believe they should be kept at work, but I don't know what to suggest to make them better men. I think that the present action of the State Board of Prison Directors is as fully as detrimental to free labor as obtained under the past system of the old Constitution. There is no difference. It is just as detrimental to the industries of the State at present as ever it has been in the past.

STONE AND BRICK WORK.

Michael Heverin, a stone contractor, doing business in San Francisco for thirty-two years, testified as follows: My business includes marble, granite, and freestone. Wages paid in my business is $3 50 to $4 per day. For the last ten years it has been about $4 per day. Hours work per day, nine; some work their men ten hours. I have worked as high as forty men. There are between one hundred and fifty and two hundred men employed in cutting stone—that is dressing stone for building purposes. Convicts employed in dressing stone injures our business. It would take twenty to twenty-five men to do the work that was done on the wall around Mr. Fair's lot, about six months. That work was done by convict labor, and has deprived twenty skilled mechanics of employment. If three hundred men should be employed in our prisons in getting out building stone, they would do nearly all, if not all the work required in the State, and deprive stonecutters of employment. A mechanic in our business should receive $3 per day to support his family. If the State received the same pay for convict labor as we pay free labor, it would be better for our business. The output of convict labor should be stamped as being the product of convict labor. I think that the State itself should furnish the material, do all the work, and when the goods are manufactured, offer them for public sale, say once in two months. I think the law should regulate that the State Prison should not contract for any output of convict labor for more than a certain percentage less than free labor could make it. I am not in favor of employing convicts in making blocks unless they get the same price as outsiders. Five hundred convicts employed at quarrying would supply all the demand of the trade by working steady. I conceive it to be the duty of the State authorities, if they manufacture any articles at San Quentin, that they should be manufactured wholly by the

State, for free competition in the market. As the law now is, the State can be a competitor against any industry.

Edmund Dunn, a brick-maker for fourteen years, testified as follows: Am out of the business just now. There are a very few laboring men employed in the business for San Francisco markets; where employed skilled laborers get about $45 per month and board, or about $2 50 per day, for skilled labor, and other common labor about $2 per day. There are four hundred and fifty Chinamen employed in making brick out of five hundred in different parts of the State, making a total of fifty free laborers employed out of five hundred. The Chinese get $1 40 a thousand for making brick—that is, putting them in the kiln ready for burning. The State Prison could employ about four hundred and fifty men in making brick without competing with white labor, if they sold at auction every fourteen days or every month, at their yards (ready to burn), to the dealers here, and put them in kilns of from four hundred to six hundred thousand for each kiln, and would sell these kilns separate to the highest bidder, and that would drive four hundred and fifty Chinamen out of the market.

Gregory P. Hart, clerk of the Warden at San Quentin, stated that the different branches of manufacture at that prison were sash, door, and blinds; general line of furniture; some specific articles; harness, tanning, and jute; boots and shoes, clothing, and tinware—these last being for the use of the prison, as were carpenter, blacksmith, and wheelwright shops, with an occasional use of the brickyards. The method of procedure, he said, was that the contractors or proposers only supplied the material, the State furnishing labor, mode of power, and everything else. In the tannery so much was paid the State per side for the different kinds of leather turned out. These were as follows:

COLLAR LEATHER.

Alum leather	25 cents per side.
Skirting leather	34 cents per side.
Harness leather	46 cents per side.
Putting sheepskins through	$1 per hundred.

These prices are those paid the State by J. C. Johnson & Co., according to an agreement entered into on the first of last February. Upon the schedule of prices paid to the State by the other contractors, Mr. Hart could say nothing, failing to remember anything, except he believed that from 11 to 18 cents were paid for sash and that from 16 to 15 cents were paid per door. In the jute works not less than three hundred men were being worked daily at one hundred looms, and calculating sixty yards a day per loom, he put down the product at six thousand yards of cloth per diem. For this the State could calculate on $7\frac{10}{100}$ cents per yard. The boot and shoe industry was confined to making and repairing for the prisoners.

Taking up another branch of the subject, Mr. Hart testified that, taking everything into account, the cost to the State of keeping the prisoners at San Quentin was from 35 to 40 cents per diem. The average day's work of a prisoner was eight hours, there being little difference Summer and Winter.

He thought the plan of the State manufacturing and offering prison-made goods for sale, as a mercantile corporation, to be impracticable, and even went so far as to give it as his belief that the State would not be able to find purchasers.

Much of the rest of the examination was devoted to a consideration of the question, whether the present system of conducting our State Prisons interferes with discipline; but as that is a side issue, it may be passed over for the present.

Several other witnesses were examined, among them Director Hendricks; but enough has been given to show that the question was fully considered pro and con. Even after the formal examination was closed, informal discussions were held, in which every branch of the subject was ventilated, and its every bearing touched upon.

CONCLUSIONS.

What, then, are the conclusions arrived at? This, in the first place: That the subject is one of the most abstruse and complex in modern legislation. It may be imagined that this is too sweeping a statement, but I am well supported by the following opinions.

In its second biennial report, the Bureau of Labor Statistics of the State of Illinois, in grappling with the question of "Convict Labor," contains the following:

> The employment of the criminals of the State in our two penitentiaries, under contractors, who secure their service at low rates of wages, and thus are enabled to place the products of that labor in the market frequently at ruinously competitive prices, constitutes an injustice alike to the manufacturers and to the honest workingmen of the State, against which they make constant and earnest protest.
>
> It is recognized that on humanitarian, sanitary, and other grounds, occupation of some kind should be given to State prisoners; but it is objected that under the present system the labor of convicts is so contracted as to operate injuriously upon many skilled occupations in civil life, by rendering a reduction in wages necessary to enable employers to compete with penitentiary contractors. The plea urged in support of this system, that it renders our penal institutions nearly or quite self-supporting, is not recognized as either justifying the system or as constituting a permanent desideratum in public policy. The welfare of the industrious and honest citizen is of higher import to the State than any merely economical consideration in administering the affairs of its penal institutions. By the contract system the cost of the criminals of the State is indirectly imposed, in unequal measure, upon those least able to bear it—upon the workingmen themselves, who are compelled to compete with prison labor, in order that the prisons may be made self-supporting.
>
> Among the suggestions urged as partial remedies, at least, for this evil, is the employment of convicts under prison management, the goods manufactured to be sold at market rates, and the profits, if any, to accrue to the prisoners upon their discharge, or to their families during incarceration, or to the State. Another is the employment of convicts, so far as possible, upon public works involving but little skill, as in the manufacture of macadam for a system of public highways. Still another comes from the Warden of the new Southern Penitentiary, who urges that prisoners at that institution be employed in the making of brick and quarrying of stone, for which the opportunities at Chester are specially good, rather than in the more skilled occupations under contractors.

The Michigan State Bureau of Statistics goes even further, and in its last annual report has the following to say:

> #### HOW SHALL THEY BE EMPLOYED?
>
> The people of this State have embraced in the Constitution this provision:
>
> "No mechanical trade shall hereafter be taught to convicts in the State Prison of this State, except the manufacture of those articles of which the chief supply for home consumption is imported from other States and countries."
>
> Irrespective of the question of the wisdom or unwisdom of such a provision, it is nevertheless a part of the organic law and it is at least questionable whether the State should not submit the question of its propriety to the people before violating the letter and spirit of a constitution which it expects the people to respect.
>
> Concede that they should be employed, yet the object of their employment is not alone pecuniary profit to the State. The mental, moral, and physical condition of the prisoner during his detention and at the time of his discharge, has entered largely into the question of the policy of his employment. The desire to make these institutions in a measure reformatory as well as punitory, and that the State may to some extent be relieved of the burden of the support of criminals, together led to their employment.

The purpose of the detention of a prisoner should never be lost sight of while the detention continues; the short-time prisoners should be subjected to reformatory or educational treatment as well as the long-timer.

If, in thirty days, a convict can be instructed in the alphabet of any industrial art, to which he can turn his energies after his discharge, or if he can be taught that industry is the best policy, he should be so directed, even at a cost to the State.

The manufacturer complains that the articles manufactured in our penal institutions come into competition with goods which he manufactures, and the wage-worker insists that the wage market is being further depressed by convict labor, sold for less than will support the convicts while engaged in it, or its product sold for less than free labor can produce it.

It has occurred to us that these results are felt, because of the contract system, whereby the contractor obtains a great advantage over other manufacturers, and because where the contract system does not prevail, the institution is being carried on with unlimited capital and credit, with large buildings and capacity, without taxes, as a great manufacturing enterprise, where the cost of maintenance is from eleven to nineteen cents per day, and where, for a large percentage of its operatives, it receives pay for their board at a rate which covers, if not exceeds, the expense of their maintenance, and that if the contract system were abolished, and these institutions operated with a view to the reformation of their inmates, as corrective schools, rather than manufactories, treating their labor as labor should be regarded, not only in prison but out of it, as an incident, as a means—not an end—there would be less cause for complaint.

CONTRACT SYSTEM.

The contract system should be abolished, because:

First—The contractor has no interest in the prisoner except in his ability to produce. The prisoner is the ward of the State. His employment is a means, not an end, and no contractor with arbitrary rules as to time, etc., should come between the prisoner and the State. The incentive to labor should be shortened terms, care for dependents, and payment of a stipend when discharged. These men are required to work an average of ten hours per day for the year, eight and one half hours in midwinter, and eleven and one half hours in midsummer, and they work diligently. They haven't the relief incident to outdoor labor—no rainy days—all their time is employed except nights and Sundays. Is it not idle to expect reformatory or educational influences to be exerted, except those incident to industry, or to operate upon men who work ten hours per day? The inmates are tired, the keepers have been with the men all day, and the Warden or Superintendent has been engrossed with the management of the financial and commercial transactions of the prison.

Second—The sale of the product should be regulated by the State.

Third—If there is any profit in his employment it should not go to the contractor. If the contract system is retained, the State should own the plant and machinery as well as the shops, and thus open a wider field for competition.

The annual report for 1882-83 of the "Bureau of Industrial Statistics" of Pennsylvania follows in a similar strain. It first speaks of imported contract labor, charging that large contractors through their agents import pauper labor from Europe, and declares that this is not only rank injustice to the working people of the commonwealth, but that the competition created by the importation of these ignorant and degraded paupers, lowers the social and moral position of the home working man. To the contractor the gain is but for a moment, while the evil to the community is lasting, and the contract system is a blow at the interest of both labor and capital. Applying these remarks to the subject of convict labor the Chief of the Bureau writes as follows:

CONVICT CONTRACT LABOR.

The same objections are urged against the system of convict contract labor in our prisons and penitentiaries, and is a subject which has agitated the minds of the working classes in a number of the leading manufacturing States for a number of years. It has, in fact, the same effect in lowering the standard of wages and depriving the honest workingman of the just reward of his labor, whilst there is not the same appearance of reason to justify it. Two reasons among others have been given in justification of contract labor: 1. The reduction of prison expenses, and the relief from general taxation to that extent; and, 2. The elevation of the criminal by occupying his time in a useful and honorable pursuit; by promoting in him habits of industry, and in so educating him that at the end of his term of imprisonment he will have acquired the habits, knowledge, and disposition which will enable him to earn an honest living. It has been found, however, that the convict contract system tends to degrade not elevate the prisoner. The contractor, holding his labor in contempt, and actuated solely by his own selfish purposes, treats the prisoner as outside the pale of humanity. The direct expense is saved to the State, but the degradation of the prisoner is increased. The practical effect of prison competition has been found to be the production of articles at so small a cost as to defy the competition of honest and law-abiding labor. The standard of honest wages is prejudiced, governed, and controlled by criminal labor. Under the convict contract system capital, which regards labor as a brutal machine, obtains an advantage over capital which employs honest men, and seeks to elevate and benefit the working classes. The evils resulting to the working people by the introduction of the unfair competition of imported pauper labor are the same as from contract convict labor, whilst the objection of such importation is solely a temporary advantage gained by the contractor.

The foregoing extracts afford, I am sure, all the evidence that is needed to convince this honorable body of the extraordinary importance of the subject of convict labor, and if anything further were needed, let me assure you that it forms the major portion of every report made by the other bureaus of labor statistics throughout the country.

APPLICATIONS.

To come now to a local application of the lessons, facts, and figures under consideration. That the law aiming to do away with an evil has not yet been successful, must have been seen by the attentive reader of this chapter. In two words, the case stands thus: Before the Act of 1880 went into operation, which was on the first of January, 1882, a few business firms in San Francisco practically controlled the State Prison at San Quentin by contracting to furnish its convicts with labor at so much a day. This was seen to be wrong, and by the provisions of the Act referred to the contract system was done away with, and in its place the following plan of working the convicts was ordered: That the State should supply the labor and motive power to whosoever wished to engage them, and then that the product should be sold at a reasonable rate.

How has this plan worked? Practically the old contract system is still as active as it ever was, although masquerading under another name. Instead of contracting to pay so much per diem for convict labor, the firms who now make use of a State institution, contract to pay so much for the product of that labor. It is true that the contract is now called a "proposition," but its effects are practically and precisely the same. The result proves this. The evil complained of under the contract labor system was that the firms by paying a low, an exceedingly low rate of wages, were enabled to have made for them articles at such a price that it would be impossible for any other manufacturer who was not enjoying the benefits of such a contract to produce similar goods at anything approaching a similar price. Under the present system, a few firms contract to take from the prison all that is manufactured there at certain prices, but these prices, like the wages they paid, are so low that they once more receive their goods at a rate which again enables them to place them on the market at a figure with which no outside firm can compete. What difference does it make then, whether these firms contract to pay a certain wage, or contract to pay a certain price for the product, when wage and price are both ruinously low? Call it wage per diem, or call it price per piece, the result is precisely the same. It is only a case of evasion, of tweedledum and tweedledee, of upper and lower millstones, between which the poor working man, who is not in State Prison, is being rapidly ground down.

Another question to be considered is: how does the State come out in this case of change without alteration? My opinion is that she is worse off now than she was before; or at any rate the firms doing business at San Quentin have not afforded me an opportunity to disprove this. Under the old system it was known exactly how much the State received; so many convicts were working at so much, with such a result. Under the new system there is such secrecy, such forgetfulness, such lapses of memory, and such mislaying of papers, that it has been found impossible to procure what may be called an official schedule of the prices paid by the contractors to the State Prison for the articles made there. The inquiries pushed concerning this evasive schedule were numerous but unavailing, the written demands for a glimpse of this precious document were many but irresponsive. As a consequence, I cannot present you with exact figures, and am forced to the deduction that the firms who are the patrons of State penal industry must have very good or very bad reasons for their want of confidence. A history of the correspondence between the Warden at San Quentin and this bureau on the one hand, and between the California Furniture Manufacturing Company and myself on the other, would be too tedious to reproduce, and it must suffice to say that it was unproductive. The termination of the correspondence will best show how matters stand. On the thirtieth of September, 1884, the following letter was addressed to the Warden at San Quentin, but before giving it, it should be premised that the "prompt answer," to which reference is made, was in reply to a similar demand, coupled with the request for a classification of the prisoners under his charge. This classification he furnished, but omitted to give the schedule of prices asked for, and then it was that this letter of the thirtieth was written:

Office of State Bureau of Labor Statistics,
San Francisco, September 30, 1884.

Hon. Paul Shirley, Warden San Quentin Prison:

Dear Sir: Your favor dated twenty-seventh at hand, and I wish to express to you my sincere thanks for your prompt reply.

You would oblige me by furnishing this office with *the names of all* persons having work done at the prison, and also *the price-list* of the said work; also, the cost per day to support convicts (food, clothing, etc.); also, the *monthly* output in the different branches of industry in the prison, viz: chair department, jute, etc.

By complying with the above request, you will confer a favor on,

Yours truly,
JOHN S. ENOS, Commissioner.

In answer to the above, the following was received:

Warden's Office, California State Prison,
San Quentin, October 2, 1884.

Hon. John S. Enos, corner Geary and Dupont Streets, San Francisco:

Dear Sir: Your favor of thirtieth ult. is duly at hand and noted. To give you all the data you ask would take some time, and will appear almost as you want it in our annual report, now preparing. Any information you require other than that contained in the report will be promptly furnished.

Yours, very truly,
PAUL SHIRLEY, Warden.

From N. P. Cole there was asked a price list of the goods received by the California Furniture Manufacturing Company from San Quentin; the following being the last response:

California Furniture Manufacturing Company,
San Francisco, September 28, 1884.

John S. Enos, Esq.:

Dear Sir: Yours of this date I received by the hand of one of your clerks, and told him I would send the list to you to-morrow. Since he left, it occurred to me that I had better get the consent of the Warden of the prison before furnishing it. As soon as I get his answer, will attend to it at once. I am perfectly willing to furnish it, and know of no reason that would cause the officers of the prison to object.

I remain yours, truly,

N. P. COLE.

The plain English of this correspondence is that Mr. Cole does not see fit to give the information asked for until after consultation with the Warden—though where the necessity for this consultation comes in you will, perhaps, fail to see—and the Warden refers me to a report which is at present unavailable. How necessary and valuable this information would be you may gather from the statement made by Gregory P. Hart, in his testimony, that, "the prison authorities have a specified price for every article they produce."

So much for the furniture part of the product. Next comes the sash, door, and blind department, the product of which is taken, on propositions by Kittredge & Co., Doe & Co., and Wilson & Bros. The same non-success attended my endeavors to procure the schedule of prices paid by these firms; but, fortunately, I have been enabled to supply its place from an outside source. I refer to the following letter, furnished me by one of the largest manufacturing companies, in a similar line, in the State:

Regarding the disadvantageous relation occupied by manufacturers employing free white skilled labor, in competition with convict labor producing the same articles at California State Prison, the situation can be best illustrated by a statement showing the operations of a single month, and comparing same with the cost of a similar output manufactured by free white labor, men and boys, outside the prison walls. For example, take the ascertained monthly result in the case of California Door Company, occupying nearly one half the prison shops and manufacturing facilities. The State furnishes a brick building 60x200 feet, four stories, with power, shafting, elevators, etc.; also space for piling lumber, drying kilns, and heating facilities. For the month of June the articles turned out at prices opposite each item, were very nearly as follows:

11,500 doors all kinds, average 24 cents	$2,760 00
8,000 pairs 1¼ and 1½ sashes, average 13 cents	1,040 00
1,500 pairs outside blinds, 25 cents	375 00
750 sets inside blinds, 75 cents	562 50
1,000 transoms, 5 cents	.50 00
	$4,787 50
State paid for supervising free labor, say	1,300 00
Leaving net amount received for month	$3,487 50
Out of this, take for rent of land occupied by lumber, rent of these immense shops, cost of power, wear and tear, etc., a low estimate would be, per month	700 00
Leaving to the State for convict labor	$2,787 50

Number of convicts employed, estimated on a pro rata basis of other months, would be 295; the amount received by State per convict per day for 26 working days being less than 38 cents each. When it is considered that the State maintains these prisoners at an alleged cost of 44 cents each per day, the money result above shown seems grossly inadequate. These convicts, it is admitted, do good work. They are allowed 10 cents per day each for good performance, in the shape of a fortnightly credit of $1 20 each at commissary's store; supposed to be paid by door company. This "douceur" of 10 cents per day is understood as an *additional* sweetner to California prison life; making the California State Prison all the more fashionable and pleasant as a resort for criminals, small and large. That it is, in that respect, altogether too popular, is evidenced by the very large proportion of our population seeking its fine accommodation; aside from shorter hours, these convicts doubtless produce as much per man as would average hands in similar establishments outside the prison. No comparison can be made with any factory as large, in this State, as none could exist while this remains. It may be safely estimated that the payroll of a similar establishment, working free white men and boys, and making the same monthly output, would be at least three and a half times (for the same work) the amount received by the State, for convict labor, boarded and clothed by the State. Regarding a statement of Warden Shirley made last April, before Hon. Commissioner of California Bureau Labor

Statistics, that "State Prison productions of doors, sash, and blinds was less than one per cent of home consumption," it was then more than one third, and has for several months been more than one half of all the factory products of that line of goods within the State of California.

Concerning the prices paid for the product of the harness and tannery departments not so much difficulty was experienced in gaining the needed figures, although the details are not so full as could be wished for. The prices paid by J. C. Johnson & Co. will be found in Mr. Hart's testimony, while the prices paid the trade are given in the following statement, made by John R. Brown, of Benicia:

Benicia, Cal., March 4, 1884.

To J. S. Enos, Commissioner Labor Bureau:

Cost of labor for making collar leather, per side:

Labor in beam house	$0 15
Labor in tanyard	8
Labor in splitting and shaving	8
Labor in scouring	4
Labor in setting and stuffing	6
Labor in blacking	6
Labor in finishing	4
	$0 51

Add to this insurance, taxes, night watch, engineer, teamsters, incidentals—such as machine oil, all repairs—it will actually make the cost, say—

As enumerated above	51 cents per side.
The added expenses	20 cents per side.
Total	71 cents per side.

These are bedrock prices.

Cost of skirting leather:

For labor in beam house	$0 18
For labor in yard	9
For labor in skiving	6
For labor in scouring	6
For labor in setting and stuffing	8
For labor in finishing	4
	$0 51

Add to this enumerated items in No. 1, and the cost per side will be 71 cents.

For harness leather, per side:

Beam house	$0 18
Yard	9
Shaving	6
Scouring	6
Setting and stuffing	9
Blacking	9
Finishing	9
	$0 66

Add to this expenses as per list No. 1, which must take place on all grades of leather the same, and we find that 86 cents per side is the actual cost of common harness per side, as far as labor is concerned.

Labor on alum-tanned leather, per side:

Beam house	$0 15
Yard	7
Setting and stuffing	5
Finishing	6
Measuring and gum	2
	$0 35
Add to the above	17
	$0 52

Which is the actual cost per side for alum leather.

Dear Sir: I have this day sent to your office cost of making leather outside the State Prison, at wages ranging from $2 to $2 50 per day. This statement will bear the light of day, as I am willing to submit the prices or cost per side to any three practical tanners of this State.

You will see by this statement that the Prison Commissioners are offering to do the work at ruinously low prices. The State would not get more than board for the men at the rates they work the convicts at San Quentin.

Very respectfully yours,

J. R. BROWN & CO.

The other products, boots and shoes, tinware, and clothing, are made by the convicts for the convicts, and not being put on the market are outside of the scope of this inquiry, while the jute factory, being a State industry, also belongs to another branch.

The following is a statement of the number of prisoners confined in the State Prisons and their various employments:

STATE PRISON AT SAN QUENTIN.

On the first of September, viz.:

Chair department, 103; door department, 191; jute mill, 288; tannery department, 13; harness department, 26; foundry department, 8; engineer department, 15; general kitchen, 45; hospital kitchen, 6; outside kitchen, 15; laundry department, 29; house servants, 37; scavengers, 10; sweepers, 13; whitewashers, 7; tailor shop, 12; shoe shop, 12; cooper shop, 1; paint shop, 5; tin shop, 4; carpenter shop, 3; barber shop, 10; vegetable gardens, 8; flower gardens, 4; chicken ranch, 2; hog ranch, 1; brickyard, 74; Captain of Yard's office, 4; Turnkey's office, 4; Warden's office, 4; Clerk's office, 2; Commissary Department, 7; cell and room tenders, 30; blacksmiths, 6; stables, 18; coal yard, 1; upholsterer, 1; belt maker, 1; "hoodoo" (general work), 40; lumber yard, 9; library, 7; hospital nurses, 2; patients in hospital, 11; door tenders, 6; gate tenders, 8; cripples and imbeciles, 25; dentist, 1; physician's office, 1; females, 13; unemployed, none. Total number of prisoners, 1,143.

STATE PRISON AT FOLSOM.

There are 479 prisoners on the register of the prison at this date. They are employed in the granite quarries in the prison yard, and in the improvement of the prison tract; and also in the various occupations needed for the carrying on of a prison. For the offices and stores, messengers, bed makers, and hospital, 20; invalids or incapables, 15; tailor shop, 6; shoe shop, 2; butcher shop, 1; carpenter shop, 7; tin shop, 3; blacksmith shop, 17; wagon and repair shop, 2; paint shop, 4; plumbers, 2; engineer department, 12; gashouse, stable, woodsawyers, woodcarriers, sweepers, general help in prison, cell tenders, whitewashers, officers' dining room and kitchen, prisoners' dining rooms and kitchens, gardeners, freight handlers, water carriers, lamplighters, teamsters, night cooks, gate tenders, 113; laundry, 12; barbers, rope room, riggers, wood-choppers, ox-drivers, graders, tool carriers, 37; wall builders, 5; stonecutters, 30; rough dressers, 30; derrick men, 20; quarrymen and shovelers, 141. There are none unemployed, except those noted as "invalids or incapables," and these are men who are crippled, or of unsound mind, or convalescing patients. There are but two in the hospital, and one is the nurse. The prisoners labor diligently, and show an interest in their work. Every man who is able to work is employed; the one female prisoner is also employed in the Turnkey's office and as seamstress.

This contract or proposition system not only does an injury to the workingman, but also to manufacturers. The injury to the workingman is that for the making of certain classes of goods a wage is paid that he, on the outside, cannot afford to work for; the injury to the manufacturer is that these goods are produced at a cost which is altogether below that entailed in the ordinary course of production. It is true, as has been seen by the testimony, that the firms who do business with the State Prison furnish the material, pay the skilled labor, that is the foremen and their assistants, pay for freight and hauling, and in one instance, at least, own the machinery, but all these, even for the moment leaving the low prices out of consideration, do not place the non-contracting firms on equal terms with those whose propositions have been accepted. The employers of prison labor pay no rent for warehouses, factories, etc., and have been put to no expense in erecting them; have no insurance to meet; no taxes to pay. It is claimed that the holders of accepted propositions enjoy their privileges in due and legal form; that every effort has been made on the part of the State officials to secure the best prices for the State's product. Whether this has been done or not, is not, I think, for me to judge; at any rate I would prefer that if inquiries and decisions are to be made that they should be made legislative, rather than bureaucratic.

Another question to be taken under consideration is whether the present system is the best financially for the State's interest. In the absence of the State Prison report, before referred to, an exact balance sheet, showing expenditures and receipts, cannot be given. From Mr. Hart's testimony, however, these round figures are gathered: The furniture company pays to the State about $4,000 per month; the sash, door, and blind company about a similar amount. The amount received by the State for the product of the harness and tanning department was not procurable. The figures given are far too general to be of any practical use, and I would suggest to your honorable body "that it would be an interesting inquiry to find out how the expenses and receipts of the State Prisons under the present system of convict labor compare with those of the old."

RECOMMENDATIONS.

Having presented as clear and impartial a statement of the case, *in statu quo*, as possible, I beg now to offer to your honorable body the following recommendations as to the future policy of utilizing convict labor:

First—That the contracts known as "propositions," now in force, shall be annulled.

Second—That if it be decided to give the present system a further trial, that the Wardens of the State Prisons shall immediately cause to be published in two San Francisco daily newspapers, of the largest general circulation, notices of proposals for manufacturing to be carried on in the said prisons, in such branches of industry as to the Wardens and Board of Prison Directors seem best adapted to the discipline of the prisons, and the remunerative employment of the convicts.

Third—That no propsal, so advertised for, shall be accepted, unless under the following conditions:

(a) The party, or corporation, or firm, making such proposal to the State, shall pay such reasonable rent for the use of shops, store room, steam power, and machinery (where the machinery is owned by the State) as are required to carry on such industry as the Wardens and Directors may consider just and proper.

(b) That, when any machinery, not now owned by the State, is needed, the party, corporation, or firm making such proposals, shall agree to put such machinery in place at their own expense; and to remove it without expense to the State, when the time limit of the proposal has expired.

(c) That the said party, corporation, or firm, shall also agree to furnish all other appliances necessary to the industry, and all the raw material used in connection therewith.

(d) That, on their part, the Wardens and Directors shall agree to keep all the machinery, whether owned by the State, or not, in proper repair, and to return to said party, corporation, or firm, whatever machinery may belong to them in as good condition as when received, natural wear and tear and unavoidable accidents excepted.

(e) That the party, corporation, or firm, shall furnish and pay the necessary skilled instructors and foremen, but that these, while so employed, shall be under the control of proper officers of the prisons, and that they shall in no way interfere with the discipline of the convicts.

(f) That monthly settlements shall be made between the Wardens, and such party, corporation, or firm, whose proposal has been accepted.

Fourth—That it shall be the fundamental provision in the transactions, between the State, and party, or firm, or corporation, that these transactions shall be based upon the market price of such articles as form the subject of the proposals; and that, in no case, shall a price be agreed upon that is not a fair market rate, that is not a commensurate return for the State's outlay, or that would allow such party, corporation, or firm, to enter into an unjust competition with the free labor of the State.

Fifth—That rather than such unjust competition should be practiced, or that the State should be made the instrument of an injurious opposition to manufacturers and free men, engaged in similar businesses on the outside, or that a system should be carried on under State control, tending to loss of employment or reduction of wages, the convicts of our State Prisons should serve their terms in idleness.

Sixth—That the maximum number of convicts to be employed in the State Prisons, in any industry, shall not exceed 5 per cent of the number of free mechanics employed in that identical industry in the State; and that in no case shall the product of the convicts, working under these proposals, exceed 5 per cent of the product of the free manufactories engaged in similar industries, except in the case of jute.

Seventh—That the attempt should be made to establish and carry on in the State Prisons such industries as are not already conducted in California; a plan by which all competition with free labor would be at once avoided.

Eighth—That the labor of the convicts be utilized in the manufacture of such goods and articles as the State requires for its different offices, establishments, and institutions; and that the State be a direct and *first hand* customer of the State Prisons industries, instead of buying second hand those goods and articles that are made within its own prison walls.

Ninth—That wherever practicable, convict labor should be employed in the erection, maintenance, pursuit, and repair of State and county institutions, and works.

CHAPTER VIII.

CHINESE LABOR.

It is difficult to overrate the effect and influence of the Chinese upon the industrial condition of our State. At a rough estimate we have about one hundred and four thousand of them here at present. Eighty per cent of that number directly competing with white labor, and the remaining twenty per cent engaged in trading with China and the Chinese, supplying the wants and requirements of the latter, whether of clothing, food, or anything else, almost entirely with Chinese products. It is at this place that I desire to make a suggestion. Why may not Congress be asked to lay heavy import duties upon such Chinese goods as are used by Chinese only? If it is a bad thing for the country that our money should be drawn away to a foreign country without a commercial return, as is done by the Chinese, then a heavy protective tariff on those goods would be just the thing. It would keep at least a portion of that money here. As will be seen by the accompanying table but twenty-five per cent of the food used by the Chinese is of Californian production, the other seventy-five per cent coming from China. In like manner these aliens bring eighty per cent of their clothing from the Flowery Kingdom; and as for drugs, and the other thousand and one things used by Chinese, all these things come from their native land.

Again, a protective tariff of the kind I have referred to would affect the American laborer most beneficially. It would raise the Chinaman's cost of living, thereby causing an increase of his pay, and in that manner the difference between the Mongolian's and the white man's wage would be lessened, and the latter would be the better able to compete with him. In my humble opinion, the matter is worthy of your legislative consideration.

It is not good policy for this State to cease agitating the Chinese question, although popular expression on the subject has recently become less pronounced. The Restriction Act gives us little more than a breathing spell and an opportunity, and unless that opportunity is made use of, ten years hence the portals will open once more to the myriad sons of the Celestial Empire. The State should act vigorously and to the full extent of its power. It is only by deep reflection that the influence of this evil, as it now exists and has existed for years past, can be fully comprehended. Nobody who does not actively and intimately mingle with the industrial classes can judge rightly of the influence for evil of one hundred and four thousand heathen workers, crowding out a like number of heads of families, upon the industrial and political economy of the commonwealth. Their presence keeps away half a million people directly, and another half a million indirectly; it leaves our daughters without husbands and our boys with diminished chances to earn a livelihood; it reduces the wage earning power of all, and, as experience has shown, inflicts irreparable damages even upon those who once encouraged and lived by Chinese labor. Whatever may have been the case heretofore, there is now no longer a necessity for coolie labor in this State, from the wealth of which they take annually about $28,000,000 to send into that sink of all wealth, the Chinese Empire. So much has been written upon the subject of the Chinese, that I feel I may safely leave it with these few remarks. The popular mind on the subject is fully made up, and nothing that I could add would increase the conviction that the Chinese are an unmitigated evil in and to California.

Although, as has been shown in a previous chapter, the replies to the circulars sent to the different County Assessors were not as fully answered as could be wished, enough was received from them and gathered elsewhere to enable me to present the following tables:

RATES OF WAGES PAID TO CHINESE.

Class of Labor.	Wages Paid.			
	Maximum	Minimum	Average	With or Without Board
Domestic servants	$25 00 per month	$18 00 per month	$21 50 per month	With
Cooks	30 00 per month	10 00 per month	20 00 per month	With
Laundrymen	12 00 per month	6 00 per month	10 00 per month	With
Cultivators of soil	30 00 per month	25 00 per month	27 50 per month	With
Farm laborers	25 00 per month	20 00 per month	22 50 per month	With
Brick makers	35 00 per month	25 00 per month	30 00 per month	Without
Slipper makers	5 00 per week	4 00 per week	4 50 per week	Without
Bag makers	6 00 per week	4 50 per week	5 25 per week	Without
Miners	2 00 per day	1 50 per day	1 75 per day	With
In canneries	1 25 per day	75 per day	1 00 per day	Without
Boot and shoe makers	1 75 per day	75 per day	1 25 per day	Without
Cigar makers	$4 to $12 per 1,000			Without
Cigar strippers	Paid by the piece			Without
Fishermen	Nearly all on their	own account		

The above table refers to their receipts. Their expenses are best expressed in the answers attached to the following questions:

COST OF LIVING TO CHINESE.

How much do they expend for rent either per head or collectively per month?	$2 to $4.
How much do they expend for food per head or collectively per month?	$5.
What percentage of the food are home products?	25 per cent.
What percentage of the food are imported from foreign countries?	75 per cent.
How much do they expend for clothing per head each year?	$10 to $12.
What percentage of the clothing is of American manufacture?	20 per cent.
What percentage of the clothing is imported?	80 per cent.
How much of their yearly earnings are sent out of the country?	75 per cent.
What percentage to the amount of earnings?	75 per cent.

Some light may be thrown upon the much debated question of the extent to which the employment of the Chinese comes in competition with the white industrial class, by the presentation of these facts: In 1880, there were 75,132 Chinese in the State of California. In the year ending June 30, 1882, 39,579 Chinese arrived in California. During the year ending June 30, 1883, 8,031 arrived here. Of the 8,031 emigrants arrived from China during the fiscal year 1883, 6,613 arrived during the month of July, 1882, and previous to the date when the Chinese Restriction Act went into effect, viz.: August 6, 1882, leaving but 1,418 arrivals during the remaining eleven months of the year. After making due allowance for the return of the Chinese to their native country, there are 104,000 Chinese in California at present. They are nearly all employed. Their average wages per day, including cooks, employés in wash-houses and manufacturing industries, mining and agricultural laborers, is $1 for ten months in the year, counting twenty-six days per month as "working days." The wages per head would be $260 per annum; 104,000 Chinese at $260 per year, would make a total of $27,040,000, paid the Chinese in California in the year 1884.

The following table shows the proportion of Chinese in other States and Territories where they form a notable element of the population:

STATES AND TERRITORIES.	Number of Chinese to 100,000 Whites.
Idaho	11,647
Nevada	10,113
Oregon	5,832
Montana	4,988
Washington	4,741
Wyoming	4,702
Arizona	4,636
Colorado	320

The following table shows the number of Chinese, Japanese, and Indians (out of tribal relations) in each State and Territory. Indians under tribal relations are not included, but are the subject of a special inquiry by the Census Office:

States and Territories.	Chinese.	Japanese.	Indians.
Alabama	4		213
Arizona	1,630	2	3,493
Arkansas	133		195
California	104,000	86	16,277
Colorado	612		154
Connecticut	123	6	255
Dakota	238		1,391
Delaware	1		5
District of Columbia	13	4	5
Florida	18		180
Georgia	17		124
Idaho	3,379		165
Illinois	209	3	140
Indiana	29		246
Iowa	33		466
Kansas	19		815
Kentucky	10		50
Louisiana	489		848
Maine	8		625
Maryland	5		15
Massachusetts	229	8	369
Michigan	27	1	7,249
Minnesota	24	1	2,300
Mississippi	51		1,857
Missouri	91		113
Montana	1,765		1,663
Nebraska	18		235
Nevada	5,416	3	2,803
New Hampshire	14		63
New Jersey	170	2	74
New Mexico	57		9,772
New York	909	17	819
North Carolina		1	1,230
Ohio	109	3	130
Oregon	9,510	2	1,694
Pennsylvania	148	8	184
Rhode Island	27		77
South Carolina	9		131
Tennessee	25		352
Texas	136		992
Utah	501		807
Vermont			11
Virginia	6		85
Washington	3,186	1	4,405
West Virginia	5		29
Wisconsin	16		3,161
Wyoming	914		140
Totals	134,333	148	66,407

CHAPTER IX.

THE LAND AND ITS PRODUCTS.

Under the above head I have gathered together three articles which treat of their subject-matter so thoroughly and well, that I consider them eminently fit for reproduction in such a handy volume of reference as I hope this report will be. The articles in question will be found under the sub-titles of "Labor and Statistical Problems of the Farm," from the pen of Prof. W. J. Sanborn, of the Missouri Agricultural College, Columbus, Mo.; "California Brandy and Wine Reports," and the "Barley Condition of the Country," compiled from the columns of the San Francisco *Chronicle* and *Bulletin*. They are prefaced by a table showing the acreage and distribution of the public lands of California.

THE PUBLIC LANDS OF CALIFORNIA.

THE PUBLIC LANDS.

Area of California	98,500,000 acres
Area of unentered government land	43,000,000 acres
Area suitable for lumbering, mining, and other pursuits	16,000,000 acres
Area suitable for some agricultural purpose	21,000,000 acres
Area of lakes, bays, navigable rivers, and lands steep or rocky, or otherwise not productive	6,000,000 acres

WHERE THE LAND IS.

Counties.	Acres.	Counties.	Acres.
San Luis Obispo	450,000	Sierra	210,000
Monterey	600,000	Yuba	40,000
San Benito	250,000	Butte	155,000
Santa Clara	100,000	Siskiyou	2,655,000
Santa Cruz	40,000	Alpine	465,000
Napa	40,000	Calaveras	250,000
Sonoma	165,000	Stanislaus	65,000
Lake	450,000	Merced	65,000
Mendocino	1,500,000	Placer	190,000
Shasta	1,500,000	Nevada	135,000
Lassen	2,700,000	Amador	255,000
Colusa	235,000	El Dorado	365,000
Yolo	65,000	San Bernardino	5,000,000
Tuolumne	655,000	Los Angeles	300,000
Santa Barbara	150,000	San Diego	2,500,000
Ventura	150,000	In 17 other counties	18,180,000
Kern	2,000,000		
Tulare	2,000,000	Total	42,245,000
Tehama	850,000	Humboldt county is estimated at	1,500,000

LABOR AND STATISTICAL PROBLEMS OF THE FARM.

The products of agriculture are the supporters of life, and the parent of all the arts; hence agricultural statistics are the most important of all statistics. They inform the producer, as well as the speculator, of crop prospects, and leave the fruits or profits of labor in the producers' hands, where they are of most good to civilization. As nations in the world's commercial system are no longer isolated units, statistics should be gathered on an international scheme. Your organizations are concerned with the labor, and with the productive industries of the State. In the aptitude of your field, I propose to discuss the labor problems of the farm in their relation to the social and material developments of husbandry.

THE WAGE LABORER.

The industrial revolution of this century, which has created new social and material systems, has assisted less the farm laborer than it has the wage laborer of any other important industry. The farm itself, in its relation to labor, has suffered a positive loss. Labor-saving machinery, in its division of labor into piece work, and railroads, have necessitated centers. Mechanism has shortened the hours of labor, and in its centers has created a social life attractive to labor. But expansion of labor-saving machinery on the farm has forced the laborer to seek other employment. The more spirited farm laborer has sought the schools, libraries, and social opportunities of the town. The barshare plow, requiring 3 to 4 men per acre a day of plowing, has given place to the sulky plow, asking for one man per day for 3 acres of plowing. The corn planter has replaced 10 men; the mower, 4 to 5; the reaper, 10 men; and so on for other field operations. The Titan strides of agriculture are revealed in the annual productions of farm mechanism, amounting to $68,940,486 for 1880. Corn planters numbered 68,991; grain drills, 43,222; grain sowers, 20,289; cultivators and harrows, 446,054; plows, 1,326,123; harvesters, 25,737; reapers, 35,327; reapers and mowers combined, 54,920; mowers, 72,090; rakes, 95,625; potato diggers, 33,453; and corn huskers, 44,370.

All farm machinery and implements are covered by 35,960 patents, marking a movement unparalleled by any age, or by any other industry. Our exports marked the increased power of the laborer on the farm. Those of agriculture are 77 per cent of our entire exports, and amounted to $619,269,499 for 1883. Within a half century they have gone up from little over $4,000,000 annually. The remark of Socrates that "agriculture is the mother and nurse of all the industries," is no mere sentiment for American application.

When our population numbered 80 per cent of farmers we exported little. In 1860 it was 51 per cent only engaged in agriculture; in 1870, 47.35 per cent; and in 1880 but 44.1 per cent of all workers were farmers. But with the decrease of the ratio of farms and farm laborers in ratio to population has come an increase of products for exportation. Sir, agriculture has been no laggard, but challenges our admiration. It has measured the advance of social and industrial progress through the labor its better methods have given to the arts. Within a lifetime it has given one half its former ratio of workers to other callings. Headless and heartless, this farm mechanism has sent to the town the best farm labor to occupy positions of minor trust and to satisfy its gregarious instincts in society. This impulse has been aided by the uncertainty of the tenure of farm labor, and its certain long hours of labor. Seven months of sun to sun labor, followed by five months of intermittent and uncertain labor, with its saloon companionships in hours of idleness, has been demoralizing to farm labor. Such laborer, boarded in the family of the farmer, is a burden to the wife, and often a moral pest to the children. The old polity has been wrecked and a new will secure the best labor of the day; in my experience, by the cottage home for the laborer on the farm and for his family, with a garden, a cow, pig, newspaper, and steady employment by the year. These bind labor to the farm and to its interests. The system of farming that distributes labor over the year is the most profitable. Landed interests are deeply concerned in securing good labor against the seductive influence of the town, and does not want the nerveless labor the latter refuses. Good homes, regular labor, and stated hours, will secure it, as experience teaches. It also induces conservatism in the laborer. He is never a striker, and property finds no enemy in his person. Mechanism has rendered the barbarism of extreme long days of labor, peculiar to the farm, unnecessary. Indeed, ten hours is sufficient to exhaust the normal capacity to work, when faithfully applied.

The diversity of farm operations requires more tact and the executive faculty better developed in the farm laborer than in the labor of any other industry; hence education of the farm laborer is of more importance than the education of any other class of laborers. I have handled upon three large farms four distinctive classes of farm labor, and must unequivocally indorse the educated farm laborer. He has clearer views of the just relations of capital and labor, and is not only a less captious, but is a more perceptive workman. A comparison of northern with southern labor shows this. But Europe presents less abnormal causes and a far greater proportion unable to read and write than the United States. According to Mulhall, Europe produces 16.5 bushels of grain per capita, and the United States 48.1 bushels. Europe produces 51.1 pounds of meat per capita, and the United States 171 pounds. Europe produces 15.06 bushels of grain per acre, and the United States 23.3. We till more acres per laborer here by these figures. Portugal had but one in thirty-six at school, and grew 11.64 bushels of grain per acre. Spain has 25 per cent of her population able to read and write, and grows 12.2 bushels of grain per acre. France had in 1860 58.2 per cent of her population able to read and write, and obtained 18.5 bushels. In Germany the bulk of population read and write, and her farmers gain 22.05 bushels per acre. While it is true that production follows expansion of manufactures and commerce, it must be remembered that the diffusion of knowledge is the impulse that has developed arts and commerce, and that has created the culture and wealth to enjoy their fruits. Educated farm labor has enjoyed the fruits of its own energy, and the energy of other educated labor. The Department of Agriculture finds that the manufacturing Eastern States pay for farm labor $26 61 per month, while the Southern States pay $15 30. Ohio pays $24 55, and Kentucky, by its side, $18 20. The manufacturing sections of Ohio pay $25 96, and the non-manufacturing sections $22 65. Vermont, manufacturing the least of the New England States, pays $23 70 per month. She has invested in manufacturing $28 80 per capita; while

Massachusetts pays $30 66 per month for farm labor, and has invested in manufactures per capita $74 40. Steadily employed farm labor is as well paid as any labor. By Carey's figures in 1836, the price of farm labor had increased, by 1866, 72 per cent; and by Caird, English rates, from the repeal of the corn laws, had advanced 60 per cent. In the hands of the better class of farmers, his hours of labor have been much reduced. Meat twice a day, tea, sugar, tobacco, carpets, and a paper are now his to enjoy.

PROPRIETARY LABOR.

While a broad distinction exists between wage and proprietary labor, yet in this country the latter is a laborer even in the physical sense of the word. Here the proprietor is the tiller of the soil. The census shows 3,323,876 farm laborers and 4,346,617 farmers, most of whom own the land they till. Herein lies the success of our agriculture against European. Grand results come only from the quickened perception and energy that ownership gives. Ownership is the parent of all broad permanent farm improvement. The history of Rome and Greece teaches it. The spiritless farming of Spain, Italy, and Austria, and, in fact, most of Europe, rests in the entailed mischiefs of feudalism, whose influence lives on.

Two States, adjoining, were formerly typical of two systems of labor and land ownership. In 1860 Ohio farms averaged 114 acres; those of Virginia 324 acres. Ohio raised 15.1 bushels of wheat per acre, and Virginia 9; corn, Ohio, 31.3 bushels, and Virginia 19.1; oats, Ohio 26.4 bushels, and Virginia 16.2 bushels. The war converted the owners of the soil, to a large degree, into its tillers. The following figures are those of a revolution in practice: The farms of Virginia decreased in size from 1860 to 1880 from 324 to 167 acres; in South Carolina, from 438 to 143; in Louisiana, from 536 to 171; in Mississippi, from 370 to 156 acres. This colossal movement has given a new agricultural South, four of whose Atlantic States have increased their wheat yield from 7.3 bushels from 1862 to 1875, to 7.7 bushels, in the period from 1875 to 1882, or 5 per cent in seven years. Our people love the land in spite of the cry that young men set their faces cityward. This is displayed in the average size of the farms, which, in 1850, was 203 acres, in 1860, 199 acres, in 1870, 153 acres, and in 1880 only 134 acres.

Statesmen are interested in land ownership by the masses. It means stability of government. Especially in democracies are a landless people more dangerous than an ignorant one. Machinery has not tended to centralization on the farm as in the shop, as expected. Mammoth enterprises have been wrecked, insuperable obstacles presenting themselves after the first fertility has been exhausted. The great estates on the plains, now gathering, will inevitably fall apart from the same causes that are reducing the average size of our farms. Ownership by the tiller of the soil may be insisted upon as the first requisite to successful labor on the farm.

MEDIUM SIZED FARMS

Are a second favoring condition to the economy of labor on the farm. Statesmen, observing that equality of condition and land ownership among the masses, for all time, have tended to stability of government, have been pronounced advocates of "extensive farming." Lovelye says, "Modern democracies will only escape the destiny of ancient democracies by adopting laws such as shall secure the distribution of property among a large number of holders, and shall establish a very general equality of condition." Students of ancient and modern history will recall the efforts of legislators and thinkers to secure land ownership in small holdings for the masses. France has 5,550,000 properties, of which 500,000 only average over 60 acres, while 5,000,000 are under six acres. In England and Wales not one in twenty own property, and 7,000 own over four fifths of all England. Which of the two systems choose we? England raises twenty-eight bushels of wheat per acre, and France fifteen. The six-acre farmer of France is forced to live in the past. The spade and manual labor do the duty of the plow and the horse. It is the system of brute force. It creates indolence rather than thrift, for the small corn and wheat farmer cannot occupy himself one half of the time advantageously. This narrow circle breeds mental stagnation, and clothes the French peasant in wooden shoes. Britain consumes 47 per cent more meal than France. With 51 per cent of her population engaged in agriculture, France buys food, while America, with 134-acre farms, sells heavily, with 44.1 per cent of her toilers farmers. It is the earnings, and not the savings, that constitute the true wealth and happiness of a people. The capacity to earn measures the genius of a people. Americans have understood this matter, and assert the dominance of mind over matter, and use animal and natural forces. In 1870 we had 1,321,117 farms under fifty acres. In ten years this number decreased 145,703. Machinery must have free play, and it drives small farmers remorselessly from the field. We are looked upon as the great rural nation of the world, although of a less proportion of farmers, by far, than Europe. It is the genius of mechanism that has misled the world in this view. Neither small nor large farms, then, in view of preceding statistics, favor labor best; 150 acres is large enough for machinery, and not too unwieldy for intensive methods. What coöperation may yet do, the future must answer. At present, man works best by the ownership of medium sized farms.

CAPITAL WITH LABOR.

Thirdly, capital may be regarded as the right arm of labor, when applied to agriculture, as elsewhere. "Intensive farming" narrows efforts, and divorces machinery. "Extensive farming" is broad areas, tilled with little capital, and poorly. Capital and skill combine the two, and give "intensive" "extensive" farming—large crops on broad areas, forty bushels of wheat in the place of our twelve bushels.

The United States, in stock and tools, uses but about $6 60 per acre of improved land, and a small additional sum for accessory personal property. A pioneer type of farming is revealed, based upon soil robbery, and does not touch the capacity of the man or the farm. The gross income per acre is but $6 77—a sum which, by capital, machinery, skill, rotations, etc., can be easily multiplied sixfold. It is to be regretted that the plow has been sped faster than the furnace, the anvil, and the loom, robbing the bounty of ages to fatten foreign lands, selling grain at a price that the sons will pay to replace exhausted fertility. Professor Collier has shown that the depletion in the second of two periods of nine years lost to the West, in yield per acre, $30,000,000 for corn, while the East gained $45,000,000. California has dropped, from 1862, from 24½ bushels of wheat to 13 bushels per acre. Missouri, in periods of five years each, has dropped from 14 to 12.4, to 11.9, and for the last five years to 11.7 bushels per acre. In corn a bushel less every five years is grown. The East is capitalizing its farming, and paying for the follies of its fathers in soil replenishment.

A table from Professor Schwertner shows the two movements. By it nineteen years are divided into four periods of five years each, save the last, of four years.

PERIOD.	Kansas	Missouri	Iowa	Nebraska	Minnesota	Maine	New Hampshire	Vermont	Massachusetts	Connecticut
1	17.2	15.1	13.7	16.0	17.0	12.9	14.2	15.1	16.5	16.5
2	16.9	14.0	13.7	17.7	14.7	12.7	14.5	14.5	17.1	17.1
3	14.4	13.2	11.9	12.4	15.2	13.8	15.9	15.9	17.2	17.2
4	13.1	13.1	11.1	12.7	14.3	13.7	14.5	14.5	16.5	16.5

In the group of food-selling States, having but 58.5 per cent of their population engaged in agriculture, the crops are on the decline. In the food-buying States, 28.1 per cent are farmers, and the soil is gaining in crop yield. The former scratch the soil and sell the crops, raw products. Theirs is the simplicity of farming. Look at the decline of Kansas in fifteen years. From her 1,534,350 acres of wheat, 6,280,855 bushels of wheat, worth $4,396,584 50, are lost annually in decline per acre, or $287 for every 100 acres. Exhaustion has spared no section of America, and leaves but day wages for labor at its low ebb for most sections. Kansas loses more than named. Selling 15,000,000 bushels of wheat carries away 18,920,000 pounds of nitrogen, 71,000,000 pounds of phosphoric acid, and 4,620,000 pounds of potash, soil ingredients of crops, most of which might have been retained by a rational system of farming, and which the East is now buying at the rate of $4,820,800 annually. The loss to the United States is enormous, and is our shame, rather than our pride, as statisticians and statesmen feel it to be. Are the sale of raw products a country's glory?

I have arranged from Mulhall data showing the relation of commerce and the manufacturing of raw products to good farming:

	Earnings of Commerce and Manufactures in Shillings per Head.	Yield of Bushels of Grain per Acre.
Great Britain	838	36.40
Holland	780	28.80
United States	475	23.30
Belgium	684	32.72
France	439	18.50
Austria	137	15.04
Spain	153	20.20
Italy	151	13.80
Portugal	110	11.64
Germany	359	20.05
Russia	109	10.25
Europe	290	15.06

The exceptions to the rule that the products of agriculture follow the earnings of commerce and manufactures are easily explained.

INDUSTRIAL EDUCATION

Is a fourth aid to agriculture. As this section was a condensation of a broad subject in its original scope, the writer will merely say in this synopsis that all the reasons urged in favor of professional education for the lawyer, civil engineer, etc., and more, may be presented in favor of industrial education for the farmer. His products are "the materials of art;" he sets the price of food. His industry involves the laws of the natural sciences. No art is so complex, and until this century none so poor in known facts. To-day the 150 private and public experiment stations, with nearly 1,000 trained original investigators, are amassing the richest industrial literature of this or any other age. These facts are so extensive and scattered as to require systematic organization and schools to impart them to the young. The industrial value of those facts only the sheerest ignorance or narrow prejudice can question. Grasping the principles of his business, broadens farm labor in the farmer, divorces him from the costly and painful acquisitions of experience, and emboldens policy. It makes the aggressive farmer, as well as the skillful one. It lays the foundations of his system of farming broad and deep, and builds it for the ages. All civilization rests upon the plow; let reason be its guide.

BEARINGS OF STATISTICS UPON OUR FUTURE DEVELOPMENT.

In 1860 we raised 46.0 bushels of cereals per capita; in 1870, 50.8 bushels; in 1880, 53.7 bushels per capita. Ten years ago we exported $497,760,867 worth of farm products; last year $619,269,632 worth. Fifty years ago our exports in round numbers were $4,000,000 worth annually. Mathematicians have figured this ratio of gain into the future to the wealth and glory of our country. I neither desire nor expect this gain. Rapid commercial changes are bringing our competitors to the front in grain and meat products. Our own good and cheap lands are overrun. Beyond the one hundredth meridian the rainfall varies from three to twenty inches to the base of the mountains. This meridian cuts off one third of Kansas, nearly one half of Texas, Nebraska, and Dakota. Seventeen counties of western Kansas actually fell off in population last year. Texas, settled largely by enterprising men within fifteen years, grows 8.5 bushels of wheat and 17.5 bushels of corn per acre. Its great area is best fitted for grazing, requiring twenty acres to a steer. The number of farms increased from 1870 to 1880 50.7 per cent, while the increase of improved acres was but 31.5 per cent, showing that the settling up of land overspread is going rapidly forward.

In 1860 we grew of all animals 2.9 per capita; in 1870, 2.2; in 1880, 2.7, and in 1884 2.5 per capita. The "babies" are increasing faster than domestic animals. The increased size of animals, however, keeps our meat supply good. Our dairy products per capita are about what they were in 1850. We have $200,000,000 worth of sugar yet to produce, $100,000,000 worth of which we now buy. We have more wool to grow, all our fibers nearly, tropical fruits and other farm products, and shall have, by the year 1900, 35,000,000 more of people to feed. This 35,000,000 will more than ever settle in centers of industry, or become consumers. What good lands have we? From 1870 to 1880 the acres of land in farms increased 12,834,679 yearly; 1,016,697 of those acres only were taken in States or Territories west of those crossed by the one hundredth meridian, and, liberally estimated, 1,000,000 in those States thus crossed west of this line; 11,000,000 acres, or 84 per cent of land occupied, was, then, taken east of this meridian. New Mexico actually decreased the area of her farms. One third of the country lies west of the one hundredth meridian. The land east of the one hundredth meridian is 968,391,039 acres. In farms, 494,475,095 acres. Improved acres, 256,334,955. West of the above line only 28,436,039 acres are found. What of the half area east of the one hundredth meridian not in farms? The original thirteen States, all but four of which are Northern and manufacturing States, have 210,539,520 acres in total. Of this, 136,955,946 acres are unimproved, and 71,489,236 acres are not in farms. One third of the area of those States is not inclosed, and only 34.9 per cent is improved. Lands thus passed by will come slowly into use—much, never.

At the same rate of settlement only 337,968,472 acres would be improved under the present order of events, and seven years from 1880 would suffice to absorb those unoccupied. But they are not representative States, and we strike her unimproved 136,955,946 acres out as of little moment. Michigan, Wisconsin, and Minnesota form the next group, with 124,099,840 acres of land, with only 24,506,084 acres improved. 100,000,000 acres, or 80 per cent, in these semi-old, northern, cold, forest States is unimproved. Indeed, some counties have gone back in rural population; their sons seeking in other States for better lands. Ohio, Illinois, and Indiana are the best settled States, and have 76,623,854 acres of improved lands out of a total of 82,677,120 acres, including wastes, rivers, etc. It is idle to look here for land. Iowa even in 1880 had 24,752,700 acres in farms out of 38,228,000 acres. We have stated the depopulation of western Kansas. In brief, it is in seven southern States that the great reserve of land is found. Texas, east of the one hundredth meridian, Louisiana, Mississippi, Alabama, Arkansas, Florida, and Georgia contain 250,471,021 acres, of which but 94,416,465 acres are in farms, and only 35,080,580 acres are improved. They will make cotton, and perhaps our sugar, and fibers, and tropical fruits, but they do not feed themselves, and will not soon swell our commerce. The wheat crop of last year varied in these States from 5.1 to 8.5 bushels per acre. Will dollars, labor, and 6 bushels of wheat per acre on impoverished lands, none too good, and in an unfavorable climate for energy and grain, secure the markets of Europe against cheaper labor and favoring climes? One half of this southern area is Texas and Florida lands, poor, very much of it. Theoretically, I am among the first to recognize the fact that our resources are almost untouched, but, practically, lands rejected will be occupied only under a new order of events.

At the present rate of increase, in less than one hundred years our population will number 400,000,000. It will not likely reach 200,000,000, 100 years hence. But in any event the year 1900 will open with less exportation of produce, and will soon see our own expanding centers pressing our farmers into better methods to supply their wants, while our centers will better supply our own country with all the works of art or industrial products. I confidently expect to see

American agriculture take on more of the methods of a settled country, becoming more intensive and less extensive in its characteristics. The nomad farmer has nearly had his day, and has about completed his work. Henceforth we are to see more of the genius of farming in this favored country. The gleam of the American "coulter" in the fat soil it cuts, shall reflect in the future typical lord of the soil qualities of the mind, like the coulter and the soil, polished and fertile.

CALIFORNIA BRANDY AND WINE REPORTS.

The juice of the grape has been an article of export for at least a quarter of a century.

Unfortunately there have been no well kept statistics of this trade for that period. In early years, simply the number of packages exported was recorded. Later on, the value of the contents of these packages was entered. Still later, the bulk wines were kept separate from the case wines, and the former were reported in gallons, with the value of both combined. At a latter period, case wine values were kept distinct from bulk wine values. In 1870, the railroad people commenced to carry wine, and that introduced another disturbing element to prevent accuracy in the statistics, since these wines by rail were simply reported by weight, leaving the statisticians entirely in the dark as to the proportion of case to bulk wines in the exports by land carriage, while no values were given.

It will thus be seen that anything like an accurate idea of the quantity and value of brandy, and bulk and case wines of California manufacture exported in the last twenty years, is extremely difficult to give.

The export of California brandy have never been very large. Up to 1871, the quantity was reported in packages, and since then in gallons. The price has varied according to the age and purity of the article. In 1868, crude California brandy sold at $1 25, while choice old commanded $2 50.

The value of the exports by sea since 1871, have ranged from $1 75 to $2 25 per gallon. For the purpose of making the figures uniform, we will assume that the brandy exported prior to 1871, averaged $2 per gallon. The exports by sea for the past twenty years would therefore be as follows:

Years.	Gallons.	Value.	Years.	Gallons.	Value.
1864	15,000	$30,000	1874	44,100	$86,900
1865	25,000	50,000	1875	40,200	85,300
1866	1,000	2,000	1876	36,900	74,400
1867	2,100	4,200	1877	64,900	122,500
1868	20,500	41,000	1878	91,300	167,600
1869	103,000	205,700	1879	98,900	193,200
1870	63,000	124,400	1880	97,600	196,600
1871	52,300	105,800	1881	61,900	132,900
1872	58,200	122,700	1882	44,600	99,000
1873	60,800	129,300	1883	36,000	69,000

As before remarked, it was not until 1866 that any values of California wine exports were kept, and it was not until 1869 that the bottled wine was kept separate from the bulk wine.

In order to make our table of exports uniform we shall have to estimate the number of gallons prior to 1869 by the values entered. The record of the California wine trade by sea since 1864, a period of twenty years, has been as follows:

YEARS.	Gallons.	Cases.	Value.	YEARS.	Gallons.	Cases.	Value.
1864	190,000	1,000	$100,000	1874	577,900	5,300	$404,200
1865	200,000	1,500	110,000	1875	498,400	3,700	324,100
1866	311,600	2,000	167,800	1876	508,500	3,100	332,000
1867	245,000	2,500	137,600	1877	887,300	3,600	518,100
1868	359,000	3,500	179,600	1878	1,227,900	6,600	675,400
1869	451,700	8,500	401,900	1879	1,388,800	4,200	756,300
1870	432,200	6,900	364,300	1880	1,420,700	4,600	774,300
1871	479,100	8,300	383,108	1881	1,494,300	4,400	826,600
1872	532,200	9,100	415,000	1882	1,454,600	4,200	832,100
1873	444,400	7,200	337,700	1883	1,262,000	3,300	682,400

We find no shipments of California brandy in the railroad exports until 1874, though California wine shipments by that route were reported as early as 1870, or within eight months after the road was first opened through to New York.

The returns by the overland routes are given in pounds. While most of the wine and brandy by rail has gone directly from San Francisco, there have been free shipments from San José, Stockton, Sacramento, and Marysville. For the past three years, or since the opening of the southern route, Los Angeles has been added to these interior shipping points. Up to 1882 Sacramento was the largest interior shipping point to the East of California brandy and wine, but for the past two years Los Angeles has taken that position, and is likely to hold it since there are large wine interests in Los Angeles and other southern counties; and now that there is an outlet direct by rail to the Eastern States through Arizona, most of the product manufactured south of Santa Clara County will naturally take the southern route. The manufacturers in that section appreciate the facilities for reaching distant markets given by the railroad.

The railroad returns of California brandy and wine exports since 1870, from all parts of the State to the East, are as follows:

YEARS.	Brandy—Pounds.	Wine—Pounds.
1870	-------------	1,578,900
1871	-------------	2,145,100
1872	-------------	464,800
1873	-------------	526,800
1874	38,900	558,500
1875	368,400	5,136,500
1876	251,900	5,568,500
1877	687,000	5,426,400
1878	399,600	5,717,500
1879	746,400	7,924,800
1880	915,700	9,420,600
1881	1,252,700	12,904,100
1882	1,837,200	14,464,800
1883	1,880,200	18,972,000
Totals	8,378,000	90,809,600

These are gross weights, and, of course, include the weight of the packages. It is estimated that the net gallons represent one tenth of the gross weights.

According to this we have shipped 837,800 gallons brandy by rail in the past ten years, valued at about $1,675,600; and 9,080,960 gallons wine in the past fourteen years, valued at $4,540,480.

Of this wine by rail, 8,609,400 gallons was shipped in the last ten years, valued at $4,304,700.

A large proportion of the wine shipments by rail has probably consisted of sparkling descriptions, which are worth more than still wines.

The exports of domestic brandy from California during the past twenty years may be divided as follows:

Years.	Gallons.	Value.
By Sea.		
1864–73	400,900	$815,100
1874–83	616,400	1,228,300
Totals	1,017,300	$2,043,450
By Rail.		
1874–83	830,800	1,675,500
Totals	1,855,100	$3,719,000

There has been some bottled brandy in the above exports, but the quantity has never been very large, and of course is entirely indistinguishable in the railroad export. This is also the case with the bottled wine exports by rail. The total exports of California wine for the past twenty years, so far as we have been able to get at the quantities and value, may be given as follows:

Years.	Gallons.	Cases.	Value.
By Sea.			
1864–73	3,615,200	50,500	$2,597,800
1874–83	10,720,400	43,000	6,125,500
Totals	14,335,600	93,500	$8,723,300
By Rail.			
1870–73	471,600		235,800
1874–83	8,609,400		4,304,700
Totals	23,416,600		$13,263,800
Brandy	1,855,100		3,719,000
Totals	25,271,700	93,500	$16,982,800

The above is considered a good record for this industry. Of course the bulk of the wine product is consumed in this State.

The yield during the past twenty years has been from 2,000,000 to 10,000,000 gallons per annum. At least, the latter figure was reported for 1882. The wine product of the State for the past seven years is estimated to have been 47,000,000 gallons, including 7,500,000 gallons in 1883.

THE BARLEY STATE OF THE COUNTRY.

California has the reputation of producing more and better barley than any other of the United States. The crop of the whole country varies from 40,000,000 to 50,000,000 bushels, of which California raises from 10,000,000 to 15,000,000 bushels. The census figures for 1880 give the acreage in barley in the United States at 1,997,700, and the yield 44,113,500 bushels. The States producing over 1,000,000 bushels barley in that year were as follows:

States.	Acres.	Bushels.
California	586,300	12,579,600
New York	356,600	7,792,100
Wisconsin	204,300	5,043,100
Iowa	198,900	4,022,600
Minnesota	116,000	2,973,000
Ohio	57,500	1,707,100
Nebraska	115,200	1,744,100
Illinois	55,300	1,229,500
Michigan	54,500	1,204,300
Total nine States	1,744,900	38,296,000
All other States	252,800	5,817,500
Totals	1,997,700	44,113,500

The barley crop of the United States for 1879 was estimated at 40,184,200 bushels, worth to the producers $23,625,300, against 42,245,600 bushels in 1878, worth to the producers $24,483,300. The crop for 1881, 1882, and 1883 was probably the equal of the preceding three years, which shows an average of about 42,000,000 bushels per annum.

The exports of California barley from San Francisco by sea for the past twenty years have been as follows:

Years.	Centals.	Value.
1864	29,900	$40,000
1865	149,200	160,000
1866	284,900	328,000
1867	68,200	67,900
1868	80,000	174,700
1869	314,500	346,300
1870	159,400	184,300
1871	12,400	23,100
1872	176,100	222,900
1873	247,600	351,600
1874	222,600	361,600
1875	126,200	216,000
1876	351,900	414,500
1877	90,300	183,000
1878	304,000	410,300
1879	587,100	764,000
1880	490,600	631,200
1881	101,400	138,100
1882	183,900	279,300
1883	182,800	242,200
Totals	4,163,000	$5,538,500

This trade has been much larger during the last ten than during the first ten years, as will be seen by the following divisions of the totals:

YEARS.	Centals.	Value.
1864–73	1,522,200	$1,898,800
1874–83	2,640,800	3,639,700
Totals	4,163,000	$5,538,500

In addition to the shipments by sea as above set forth, the cars have been conveying barley out of the State for the past ten years. The first shipments overland were made in 1873, both from San Francisco and Sacramento. In 1874 San José entered the market as a shipper of barley overland. Marysville came in the same year, but has sent forward nothing since 1875. In 1878 Stockton commenced shipping. During the past three years Los Angeles has forwarded small lots, as Oakland has for the past two years. The shipments of barley from California, overland, since the commencement of this trade, have been as follows, the value being based on the shipments by sea for the same years:

YEARS.	Centals.	Value.
1873	25,245	$35,000
1874	455,092	718,000
1875	83,509	150,000
1876	148,761	178,000
1877	1,660	3,200
1878	159,467	217,000
1879	275,617	345,000
1880	584,713	730,000
1881	367,812	400,000
1882	44,346	66,000
1883	46,351	60,000
Totals	2,192,573	$2,902,200

This overland trade has been quite as important as the sea trade. The total shipments of barley from California during the past twenty years may therefore be summed up as follows:

	Centals.	Value.
By sea	4,163,000	$5,538,500
By rail	2,192,600	2,902,200
Totals	6,355,600	$8,440,709

About one half of the barley sent out of the State goes from the interior. The proportions from the city and interior points since 1873 have been as follows:

	Centals.
From San Francisco	1,174,523
From Sacramento	44,731
From San José	829,695
From Stockton	117,744
From Marysville	10,318
From Los Angeles	11,107
From Oakland	6,455
Total	2,192,573

The barley shipped overland is sent chiefly to the cities in the Western States, such as St. Louis, Chicago, and Milwaukee.

Some of the barley probably comes back to us in the form of beer from the great breweries of the West. The shipments by sea have been mainly made to Australia, Europe, New York, and Philadelphia. Occasionally full shiploads have been sent to these different markets.

There is more barley consumed in the United States every year than is raised. The imports and exports for the past ten fiscal years bring out this fact very prominently, and are herewith annexed as reported by the Bureau of Statistics at Washington:

Years.	Imports—Bushels.	Exports—Bushels.
1873–74	4,891,200	320,500
1874–75	6,255,100	91,000
1875–76	10,286,000	317,800
1876–77	6,703,000	1,186,100
1877–78	6,764,200	3,921,500
1878–79	5,721,000	715,500
1879–80	7,135,300	1,128,900
1880–81	9,528,600	832,200
1881–82	12,182,700	205,900
1882–83	10,050,700	433,000
Totals	79,317,800	9,155,400

Thus within the past two years we have used 70,000,000 bushels barley in excess of what we have produced. The barley is mainly imported from Canada. The cost of the 79,317,800 bushels barley imported into the United States in the past ten years is $64,429,700, or a little over 80 cents per bushel of 48 pounds. Our farmers would like to realize that figure for their barley year after year.

The crop of barley in California was probably the largest in 1880. The deliveries at San Francisco for the harvest year of 1880–1881 were the largest in the history of the trade, amounting to 1,794,200 centals. Probably not over one fifth of the barley raised in California finds its way to San Francisco in any year. On the first of January, 1884, the stock of barley in California, according to the returns of the Produce Exchange, was 2,434,100 centals, against 1,941,500 centals on the first of January, 1883.

The shipments since January first have been moderate and mostly by cars, the returns of which have not been made public, except

13,000 centals for the month of January. It is not getting too late to ship overland, as the malting season closes with the approach of hot weather. It is thought the new crop of barley will be equal to the stand of 1880, as there are over 600,000 acres under cultivation in the State, and the estimated yield is at least 10 centals to the acre. There is still considerable barley in the State from previous crops. The need is a greater home consumption for this cereal.

CHAPTER X.

TRADE INTERESTS.

Three articles are segregated under the above heading, the first on "What we Buy and Sell—From and To Whom," being a compilation from a quarterly report of the Bureau of Statistics, at Washington, D. C.; and the other two treating of those important industries, "Bags and Burlap," and the "Lumber Export Trade of California," more attention being given to them here than was convenient in Chapter II on "Industrial Developments."

WHAT WE BUY AND SELL—FROM AND TO WHOM.

The trade statistics of a country furnish an interesting study. In the United States the Bureau of Statistics at Washington collects from all the ports every month the quantity and value of all that is imported from foreign countries and exported to foreign countries. The report for the last fiscal year has just been received. Three pages of the document are devoted to the commerce of California, Oregon, and Washington Territory, with reference to its relation to the transportation question.

For the last fiscal year the value of imports into these three States (though Washington Territory is not yet a State) was $46,865,872, while the value of the exports was $53,468,647, or a total of $100,333,519. This of course refers only to the foreign trade. The inter-State trade is also a considerable item, but the figures are not accessible. Of the value exported to foreign countries, $36,904,900 was for breadstuffs, being 70 per cent of the grand total. Five years ago the breadstuffs shipped from this section of the country was only $17,142,900. Should we gain in the same ratio for the next five years, the total would be about $80,000,000 for June 30, 1888. Most of the flour has hitherto been shipped by water. It is possible that some of it will hereafter be shipped by rail.

THE COUNTRIES WE DEAL WITH.

It would be easier to name the countries with which we have no commercial intercourse than those with which we trade to a greater or less extent. Taking imports and exports together, our largest business, of course, is with the United Kingdom of England, Ireland, and Scotland. The combined value of what we buy from the United Kingdom, and sell to it, is within a fraction of 40 per cent of what we buy from and sell to all other quarters of the world.

This accounts for the close and amicable relations between England and America. We are not so much dependent on Great Britain as Great Britain is on us, for while we bought from that country last year merchandise to the value of $188,622,800, we sold to that country a value of $425,424,200. France comes next in importance, our commerce with her being 10½ per cent of the whole. But here the conditions are reversed.

France sold us a value of $97,989,200, and bought from us a value of only $58,682,200. Germany is our next best customer, and with her our relations are more evenly balanced. Our commerce with Germany was about 8 per cent of the total. We bought $57,377,700 from her, and sold her $66,169,900. Thus from these three European countries we have about 58 per cent of our foreign commerce. The other 42 is distributed among a large number of countries, and dependencies, the West Indies claiming nearly 8 per cent; the British North American Provinces nearly 6 per cent, and Newfoundland and Labrador nearly 5 per cent.

WHAT WE BUY.

Mr. Nimmo, chief of the Bureau of Statistics, makes fifty-seven classifications of imports for the fiscal year ending June 30, 1883. The total value of the free and dutiable goods imported into the United States during that year was $723,180,914. In the order of importance, sugar and molasses form 13.73 per cent of the total. We paid $91,539,300 for sugar and $7,787,065 for molasses, etc. If sweetness alone could make people pleasant, we ought to be very amiable, for our sugar costs us more than any other one article of food. The next heaviest item is wool and woolen goods. This bill was $55,224,284, or 7.64 per cent of the total.

This is all the more remarkable in view of the large wool product of the country, and the further fact that sheep husbandry is capable of a greater expansion than yet reached.

The bill for raw wool alone was $10,949,331. Perhaps some of this was necessary for mixing. The bill for woolen cloth was $44,274,952. How much of this cloth was made from American wool, and whether any of it was superior to American goods, we have not the means of knowing. After wool comes silk and silk manufactures, the total for which was $50,807,616, or 7.03 per cent of the total. This total may be divided into $14,043,340 for raw silks used in the factories of California, New Jersey, and elsewhere, and $36,764,276 for silk manufactures used by nearly everybody, whether rich or poor. As many people can afford to use silk, and as very little raw silk is produced in this country, it is gratifying to know that we have gone into the manufacturing of silk on the scale indicated above. The list of articles embraced under the next classification is a somewhat lengthy one. It covers many of the goods found in drug stores, most of which are recommended to either cure or kill those who use them, if only persistent in their use. Mr. Nimmo names them as chemicals, drugs, dyes, and medicines, but the subdivisions to which each of these articles is capable are too numerous to mention and read in the same day. The bill for these articles was $43,126,286, or 5.96 per cent of the total. The judgment of the Court is that in most cases the money was well spent, and all the doctors, coroners, and undertakers of the country concur. The coffee we drank last year cost us $42,050,513, or 5.81 per cent of the total. What the other materials thrown in with the coffee cost is not given. Iron and steel and manufactures of the same cost us $40,796,007, or 5.64 per cent of the total, and yet we claim to produce considerable iron and steel in this country. As recently stated, there was 5,146,972 tons pig iron produced in this country in 1883, and 1,654,627 tons Bessemer steel. We also refer with pride to the shipments of American cutlery and other hardware to Europe. There is evidently a good deal of reciprocal trade in the iron and steel business. Cotton is often referred to as king in the export trade of the country, and so it is, but somehow we have to go abroad for a good many kinds of cotton goods, the total last year under that head being $37,654,221, or 5.21 per cent of the total. The value of hides and skins, exclusive of furs, was $27,640,030, or 3.82 per cent of the total. With a country capable of sustaining so many animals as America, we ought to retrench a little in that direction in the future. Tin and the manufactures of tin costs us $23,917,837, or 3.31 per cent of the total, and yet there are some good tin mines in this country. Flax and the manufactures of flax cost us $19,727,543, or 2.73 per cent of the total. Farmers will soon see the utility of devoting more attention to the cultivation of this fiber. Fruits of all kinds, including nuts, cost $19,313,041, or 2.67 per cent of the total; yet there are few fruits or nuts that cannot be produced in some part of the United States.

There are nine other articles, or classification of articles, which cost from $1,000,000 to upwards of $17,000,000, the principal one being tea, which is put down at $17,302,849. This is considerably less than our bill for coffee. It may be some consolation to the enemies of the twin evils to know that our foreign wines, spirits, and cordials, cost us only $12,308,307 in the last fiscal year, and our foreign tobacco and tobacco manufactures, $11,771,596. But the money spent for domestic liquors and tobacco was many fold more.

WHAT WE SELL.

Mr. Nimmo gives fifty-three classifications of domestic merchandise exported in the fiscal year ending June 30, 1883, the value of the whole being $804,223,632. The claim that cotton has always had is well maintained in this summary, as the total for cotton and the manufactures of cotton is $260,279,850, or 32.36 per cent of the total. As an offset to the $36,000,000 of manufactured cotton imported, it is some satisfaction to know that the cotton manufactured exported, amounted to $12,951,145, leaving a value of $247,328,721 for raw cotton, nearly every pound of which is produced in a few of the southern and southwestern States. The next most prominent line of exports covers bread and breadstuffs, the value of which was $208,040,850, or 25.87 per cent of the total.

Provisions are given at $107,388,287, or 13.35 per cent. The value of mineral oils (by which is meant petroleum), is stated at $44,913,079, or 5.58 per cent. Wood, and the manufactures of wood, are set down at $26,793,708; iron and steel, and the manufacture of the same, $22,826,250; tobacco and its manufactures, $22,095,229; and live animals, $10,789,268. These are the only classifications that reach a value of $10,000,000. There are fourteen other classifications that range from $7,923,662, down to $2,348,004, and eleven more from $1,000,000 to $2,000,000 each.

The value of domestic exports for 1882–83 may be more generally classified as follows:

	Per Cent.	Total.
Agricultural products	77.00	$619,269,449
Products, domestic, manufactured	13.91	111,890,001
Domestic products, mining	6.40	51,444,857
Domestic products, forest	1.24	9,976,143
Domestic products, fisheries	0.78	6,276,375
Other domestic exports	0.67	5,366,807
Totals	100.00	$804,223,632

In the line of raw agricultural products, as before remarked, cotton takes the lead, showing a value of $247,328,721. The next item is wheat, $119,879,341; then wheat flour, $54,826,459; bacon and hams, $38,155,952; Indian corn, $27,756,082; lard, $26,618,048; leaf tobacco, $19,438,066; and cheese, $11,134,526. These are the only items that show a value of $10,000,000 and upwards.

Horned cattle were exported to the value of $8,341,431, and fresh beef to the value of $8,342,131.

In the line of products of domestic manufacture, the leading item is $20,996,304 for wood manufactures; $19,024,894 for iron and steel manufactures, and $12,901,145 for cotton manufactures. There are sixteen more articles of domestic manufactures which vary from $7,923,662 to $1,018,138; in the line of domestic products of mining is $40,555,492 for refined mineral oils, and $3,914,941 for crude oils, besides $4,241,247 for coal. The contribution from the forest embraced a value of $3,068,132 for rosin and turpentine, $3,102,232 for timber, sawed and hewed, and $2,401,021 for whole timber. The importance of agriculture in the commerce of the country is well understood; old mother earth is well named, for all life is sustained by her; the exports of raw products of the earth form 70 to 80 per cent of the entire domestic exports of produce and merchandise.

Since 1870, the annual proportion has varied from 72.63 in 1877, to 83.25 in 1880, a difference of over 10 points. As far back as 1820, the same conditions are observed. The value of agricultural products shipped in the last fiscal year was the largest, with two exceptions, in the history of the country. These exceptions were 1879–80, and 1880–81, when the totals were $685,691,091 and $730,394,943, respectively. The shipments of bread and breadstuffs never footed up a value of $100,000,000 until 1873–74, and since then the total has never been under $111,458,300, and in 1880–81, it was $270,332,500. The largest total for raw cotton was in 1865–66, when the value of the exports was $281,385,200. In 1878–79, the amount fell to $162,304,200. Since then, there has been an increase of $85,000,000 in this item. It was not until 1876–77 that provisions showed a value of $90,000,000 per annum. Since then, the items under that head have varied from $107,388,300 to $151,528,300, the larger total being for 1880–81. Mineral oil was added to the exports about twenty years ago. From a value of $10,782,700 in 1863–64, this item rose to $61,789,400 in 1876–77. It has since been as low as $36,218,600, but was more than $8,000,000 higher than that last year.

Tobacco exports nearly doubled between 1830 and 1840, and the same thing occurred between 1840 and 1880. The largest total in this line was $45,307,900 in 1864–65.

COMBINED COMMERCE.

Prior to 1850, the total foreign commerce of the country varied from $200,000,000 to $300,000,000 per annum.

This includes the value of all the merchandise and specie imported and exported from the country. Only three times previous to 1850 did these totals exceed $300,000,000, and then not to the extent of $20,000,000 in either of the three years. From $330,637,000 in 1849–50, the annual total rose to $762,288,500 in 1859–60, a gain of 130 per cent. For the next ten years, the foreign commerce of the United States was quite irregular, and there was good cause for the irregularity, as during the interval the country passed through one of the most extensive and costly civil wars of modern times. The totals for 1859–60 were not reached again until after the war, while in 1861–62, one of the war years, the total commerce of the country fell to $433,329,900. In 1869–70, the amount was $913,305,000, or more than double that of 1861–62, but only 20 per cent more than that of 1859–60. Since 1870, the statisticians have been obliged to add another figure in computing the amount. Since turning that total, the value has risen from $1,082,755,900 to $91,675,024,800. This was the total for 1880–81, the bonanza year of the country; in the past — years the exports have exceeded the imports 25 times, while the imports have exceeded the exports 24 times, so that the honors are easy on that score.

But while the excess of imports over exports for the whole 49 years is about $790,000,000, the excess of exports over imports for the same period is about $1,500,000.

HIDES AND LEATHER EXPORTS.

San Francisco is the chief distributing point for hides and leather on the Pacific Coast. We receive from 200,000 to 250,000 hides annually from the interior of the State, Nevada, Oregon, and Washington Territory.

From 20,000 to 100,000 are also landed here from foreign sources, such as the Hawaiian Islands, Mexico, British Columbia, and Australia. Montevideo and Japan have also occasionally sent us small consignments. The price of dry hides in this market has varied from 12 cents to 20 cents in the past quarter of a century. The tanning trade was inaugurated about the year 1860. There may have been some tanneries in the State before that time. Now there are probably from 50 to 75 of these tanneries all over the State, and they pick up a good many hides from local sources. We have had a fair export demand for California leather during the past twenty years.

The figures under this head are not continuous, as the railroad has diverted shipments since 1869, and there are no accurate values to such shipments.

Twenty years ago the leather export trade amounted to $35,000 to $40,000 per annum. In 1868, it was $225,000.

Some years it has been even larger than that. These leather exports are made to New York, Europe, Japan, and other markets.

The shipments of hides from California were commenced very early in its history. At that time there was nothing else to do with them. Of course the only market was New York. The shipments of hides from California by water since 1858 have been as follows:

Years.	Number.	Years.	Number.
1858	142,400	1871	68,900
1859	151,400	1872	86,700
1860	170,400	1873	76,100
1861	178,000	1874	107,200
1862	315,800	1875	128,000
1863	308,200	1876	94,300
1864	329,400	1877	49,700
1865	340,400	1878	6,300
1866	157,400	1879	10,100
1867	88,200	1880	1,900
1868	73,500	1881	100
1869	109,600	1882	7,800
1870	65,400	1883	300

In early years many salted hides were sent to the eastern market both by way of Cape Horn and also by the Panama steamers.

The shipment of wet hides across the isthmus and through the topics was attended with a good deal of risk, and for the most part only dry hides were forwarded. These shipments have been quite irregular. The number sent off in 1858 was actually larger than ten years later, though the heaviest shipments by water were made from 1862 to 1865. Since 1869 there have been a good many hides sent to New York by rail. Our first record of these shipments by rail dates from 1870. The returns of railroad exports are all given in pounds, and hence we give the record of these consignments separately, as follows:

Years.	Pounds.	Years.	Pounds.
1870	151,100	1877	4,712,400
1871	772,400	1878	4,209,300
1872	494,500	1879	5,262,200
1873	69,900	1880	4,455,700
1874	1,136,800	1881	3,354,900
1875	1,890,400	1882	3,355,600
1876	4,632,200	1883	2,717,800

The figures for the first four years in the table represent only the exports by rail from San Francisco.

In 1874, the first shipment was made from the interior direct to the East, consisting of 231,500 pounds from Marysville. In 1876, San José commenced shipping direct to the East by rail, and, in the following year, Sacramento. In 1881, the first direct shipment of hides to the East from Los Angeles was made.

In 1882, Oakland was on the list for the first time. The bulk of the quantity by rail, however, has always gone from San Francisco. In 1874, consignments of pelts were included in the same classification by the railroad people.

The proportion of pelts, however, has been small, amounting in

1882 and 1883, when kept separately, to only 261,000 and 463,000, respectively. These weights are not in the totals for those years.

The hide shipments from California by water in the past 26 years, may be given in periods of 6 and 10 years, as follows:

Years.	Number.
1858-63	1,266,200
1864-73	1,395,900
1874-83	405,700
Total	3,067,800

The small number for the last ten years is due to the operations of the railroad.

The exports overland, from 1870 to 1883, amounted to 37,215,200 pounds, or for the last ten years 35,727,300 pounds.

Allowing that these hides averaged 25 pounds apiece, the rail shipments for the past ten years would show a total of 1,492,100 hides, making, with those sent by water, a total of 1,834,800, against a total of 1,455,400 by water and by rail in the previous ten years. These hides have been worth from $3 to $4 apiece, as a rule.

Averaging them all at $3 50 apiece, this branch of our export trade for the past 26 years amounts to $16,947,400, of which $11,515,700 is the result of the past 20 years.

BAGS AND BURLAP.

SOME FACTS ABOUT THE GRAIN-SACK TRADE—A SEVERE TAX ON FARMERS—WHY CALIFORNIA WHEAT CANNOT BE SENT TO EUROPE IN BULK—THE DUTY ON JUTE.

Among the many taxes laid upon the farmer not the least is the cost of grain bags. The grain-growers of California do not spend less than $2,000,000 annually for this purpose, which is one that brings no return; for grain in this State is exported in bags, and not in bulk, as in the Eastern States. With high rates of ocean freight, the burdens upon our agriculturists are so great that of the many millions of dollars realized for the grain crops of this State, but few find their way into the pockets of the farmers. The grain-sack question has been considerably agitated among the grangers, especially during harvest seasons, when the importers and speculators, with the aid of corners, inflate the price of the commodity almost 100 per cent. It has often been asked why wheat, barley, and other grains, which is sent across the Atlantic in bulk, cannot be shipped in the same manner from San Francisco.

A little reflection will show that there is a vast difference between sending grain in bulk across the Atlantic, a passage occupying but fourteen to twenty days, and a long voyage through one of the roughest seas of the world—that off Cape Horn—a trip which never consumes less than ninety and often consumes the better part of one hundred days.

Were grain shipped in bulk around Cape Horn, it is safe to say that about 15 per cent of the vessels so laden would be foundered, and that the cargo of an equal number would be completely damaged.

LOADING OF GRAIN.

The danger of shifting cargoes is even a greater one than the most violent hurricane, and careless stevedoring and freighting have sent more sailors to Davy Jones' locker than any other agency. The men engaged in the wheat export trade, and particularly those in marine insurance, have profited by the experience, in consequence of which one of the main requirements of good merchantable wheat now is that it shall be contained in new jute bags. The loading of vessels has become a special branch of the export business, and no vessel or cargo can be insured unless the Captain can produce a certificate from the Underwriter's Surveyor that the cargo has been stowed in a proper and safe manner. It may not be generally known that each cargo requires from $250 to $350 worth of redwood lumber for "dunnage" planks, which are laid across the timbers of the ship, as the contact of the grain with the timbers during the long voyage would spoil the grain. That the necessity of carrying grain in sacks is not assumed, but real, is proved by the many adverse criticisms which have been pronounced against the system of carrying it in bulk, which is in vogue at Atlantic seaports, for, though the voyage is short and its dangers less great, the number of losses from shifting cargoes is disproportionately great. It can safely be asserted that there is no port in all the world where the percentage of disasters from that cause is smaller than that of San Francisco. The average of loss of grain vessels out of an annual total of from 300 to 400 dispatched from this point is about three. The rates of marine insurance have been proportionately decreased, and it is certain that should the attempt to ship grain in bulk ever be made, the advance in these rates would be fully as large as the cost of grain bags.

THE BAG BURDEN.

The grain producers need therefore entertain no hope that they will ever be relieved from the bag burden by a change of the mode of shipment. It is nevertheless true that the burden is unjustly onerous and that it ought to be abated if possible, notwithstanding the fact that there have been no effective corners during the past three years, and bags at the present day can be bought at less than import cost. The sources from which California draws her supply of bags are India and Scotland, the places of shipment being Calcutta and Dundee. The imports from the latter port, however, have dwindled down to an inconsiderable amount, and the India bags virtually rule the market. But these imports are not always in the shape of bags. Quite a large quantity comes as jute, the material out of which bags are made.

Upon this the Government levies a 25 per cent ad valorem duty to foster and protect the jute-growing industry in the United States.

There is at the present moment but one establishment in this State at which this jute is manufactured into grain bags. This is the factory at the State Prison in San Quentin, where operations, though commenced but a short time ago, have been eminently successful, netting a monthly profit of from $4,000 to $5,000. There was a bag manufacturing establishment at East Oakland up to October last. This was the Pacific Jute Company's mills, a concern which succumbed after a long struggle for fair profits. Lately it has passed into other hands, and now, under the name of the "California Jute Company," another attempt is to be made to make the weaving of burlap successful.

THE DUTY ON CLOTH.

The Government encourages the industry by levying an import of 30 per cent ad valorem upon the cloth, in which shape another moiety of the imports reaches this port. There are four factories in this city and six in the interior in which the sewing of bags out of burlap is carried on. The work gives employment at busy seasons to not less than 300 women and girls. But by far the greater part of supply comes in the shape of bags ready made, and that despite the fact that the Government discriminates against them by levying a duty of 40 per cent ad valorem upon them.

Viewed in connection with the protective tariff, the problem of cheaper bags presents difficulties. That the duties increase the cost of bags to the farmer at the rate of about two and a half cents each is plain. But this duty is levied for the triple purpose of encouraging the raising of jute, the weaving of burlaps, and the sewing of bags. It seems to be taken for granted that Congress will not reduce these duties, although it falls short of its intended purpose. For years past the imported ready-made bags have commanded a much higher price than those manufactued at the Oakland mill, and although the latter company has persistently and largely undersold the importer, the consumers seem to have been willing to pay rather an advance for the Calcutta made article than use the home-made product.

What the possibilities of jute culture are in this State does not seem to have as yet been determined. The Prison Commissioners have taken a lively interest in encouraging the raising of the plant, but so far, their efforts have not met with practical success.

At best, the price of bags, even should jute be successfully raised in this State, would be reduced only by so much as corresponds with the difference between the cost of imported and home-made jute, for the San Quentin factory has need of the tariff rate, and the resulting market price of bags, in order to enable it to compete with the Calcutta mills.

PRICE OF SACKS.

As matters now stand it costs on an average about 8 cents to lay a bag manufactured in Calcutta down in San Francisco, duty paid, and as the market price now ranges from 7⅝ to 7¾ cents, it follows that under the present state of affairs somebody is losing money, while the farmer is getting his bags below cost price. It is not necessary to discuss here the causes which have led to this decline in the market, for they are not local only.

California, with an expected wheat surplus of 1,200,000 tons, will require 30,000,000 bags, and Oregon will require about 6,000,000 more. Yet, with this great demand before them, the importers and holders have been unable to control the market, and the farmer reaps the benefit. There are few commodities which have been subject to so many and so great fluctuations, generally produced by local and speculative causes.

Grain bags have been a favorite article of trade in which to make "corners," and few years have passed which have not witnessed an attempt in that direction. The last was in July, 1881, when the market price reached 10½ cents. The highest price since 1876 was 14¾ cents, obtained in October, 1878, and the lowest was paid about a month ago, bags then changing hands at 7 cents each.

LUMBER EXPORT TRADE OF CALIFORNIA.

The two principal export products which the argonauts found in California upon their arrival were gold and lumber. These were indigenous to the soil. Gold was the most available of the two, because it was ready for export the moment it was washed from the sands in the dry river beds, whereas the trees must be felled and the logs sawed into boards before lumber could be exported; and sawmills were not very plentiful in this State in the pioneer days. But in both cases the raw material was here in abundance, and without any previous care or labor on the part of those who found them, and who had come to take possession of them. We have not the date of the first exports of lumber from California. Of course in pioneer days the hunt for gold had the preference. Men lived in tents or sent East for houses in frame all ready to put up on arrival, rather than be at the trouble and expense of getting out lumber from the forests of the State. But in course of time it was found that there was wealth in the trees along the river banks as well as in the sands of the river beds, and the sawmill was erected and the work of preparing lumber for the market commenced.

The lumber exports from California by sea for the past twenty years have been as follows in M feet, board measure:

Years.	M Feet.	Years.	M Feet.
1864	10,681	1874	9,036
1865	12,580	1875	10,024
1866	7,825	1876	10,781
1867	5,735	1877	13,874
1868	7,602	1878	14,598
1869	8,509	1879	16,501
1870	13,680	1880	14,371
1871	17,591	1881	18,269
1872	16,517	1882	22,094
1873	17,415	1883	14,876

As will be seen, there were moderate shipments in from 1866 to 1869, both years inclusive, and again in 1874. Otherwise the annual exports by sea have never fallen below 10,000,000 feet, while in 1882 the total was over 22,000,000 feet. The quantity shipped for the past twenty years is 262,559,000 feet, divided between the first and second decade as follows:

1864–73	118,135,000
1874–83	144,424,000
Total feet	262,559,000

Some of this lumber has been manifested as high as $30 per M feet, and some as low as $10. Perhaps a fair average right through the whole period for all sorts would be $20 per M feet, which would give a value of $5,251,200 for the trade.

In addition to the exports by sea, there has been more or less lumber shipped overland by cars in the past ten years. There were shipments of lumber from Sacramento to the east by rail as early as 1871, or within two years after the opening of the road. The first shipments by rail from San Francisco were made in 1873, and continuously every year since. These shipments have never been large, and being reported by weight, it is hardly worth while to follow them. The principal markets that draw upon us for lumber are Australia, China, and South America. There have also been free shipments to Central America and Mexico, as well as to the Hawaiian, Society, and other islands in the Pacific. We have sent occasionally small consignments of lumber to Europe for many years, and have also sent some small lots to New York by sea in the last ten years. Besides boards, we have exported a good many laths, shingles, and other forms of lumber to various parts of the world for a long time. We have also sent considerable consignments of doors, blinds, window sash, and moldings to Australia from year to year. In one form or another, the lumber exports from California for the past twenty years have been nearer $10,000,000 than $5,000,000.

The redwood forests are peculiar to California. These commence at the northern coast boundary of the State, and run out just this side of Lower California on the extreme southern coast boundary. Why Providence has given to California the only known redwood forests of the world, is a circumstance for scientists to investigate. According to the census of 1880, the quantity of redwood in California was 25,825,000,000 feet, board measurement, while the same authority gives the amount cut during the year ending May 31, 1880, at 186,635,000 feet, board measurement. At this rate of consumption, the redwood forests of this State will not last many years, unless efforts are made to keep them renewed. During the Summer of 1883, some Scotch capitalists purchased from 50,000 to 60,000 acres of redwood forests in Humboldt County, and organized the California Redwood Company, full particulars of which were given in the *Bulletin* September 7, 1883. The first full cargo of redwood for Europe was cleared from San Francisco January 27, 1883; the second November 30, 1883; the third January 14, 1884; and the fifth February 23, 1884, the four vessels carrying 2,006,000 feet, valued at $47,600. The Prince Rupert is now loading a cargo of lumber for London on the same account.

While the quantity of lumber shipped from California is comparatively small, it should be remembered that the large lumber interests in Oregon and Washington are practically controlled by California capitalists. Most of the orders for lumber for Australia, China, and South America are received in San Francisco, but the vessels are loaded at the mill ports at the north, at Eureka, on the California coast, and in the Columbia River and on the Sound. We have not the details of this trade at hand for the past twenty years, but it must foot up many millions in money, a good proportion of which properly belongs to the export trade of California, but as the vessels were not cleared in this customs district, the values cannot be legitimately credited to San Francisco. The large supplies annually consumed in this city and around the bay are mainly obtained from Oregon and Washington Territory. Despite the fact that scores of mills have been decimating these forests at the north for many years at a fearful rate, the number of trees removed has made but little impression on the supply. In 1883 there was received at San Francisco 276,000,000 feet of lumber, 135,000,000 shingles, 90,000,000 laths, 1,600,000 railroad ties, besides a large quantity of minor descriptions.

CHAPTER XI.

THE EIGHT-HOUR LAW.

The question as to what shall constitute a day's work is one that is yearly pressing itself upon the attention of the country, and which must sooner or later be definitely answered.

Already the balance of opinion seems to be in favor of what has been called "short hours and long pay." Upon this subject Joseph Medill, of the Chicago *Tribune*, who has given much attention to the labor question, made the following statement before the Senate Committee on Education and Labor, September 26, 1883. It is of course understood that these are Mr. Medill's opinions, and I quote them without indorsement:

"SHORT HOURS AND LONG PAY."

It is a standard belief in trades union lodges that the ills of labor would be relieved in great degree by shortening the day's work to six or eight hours, as it would cut down production per man twenty-five or forty per cent, thus creating a great demand for extra labor, which, in turn, would force up wages to a high point, say twelve hours' pay for eight hours' work, or fourteen hours' pay for six hours' work. And it is alleged and contended that nothing stands in the way of the adoption of this scheme of long pay for short work, except the unfeeling selfishness of employing capitalists. In my opinion, this idea to get a "corner" on the labor market would prove delusive, and fail utterly, if tried; and for these reasons: increased wages for short work would instantly attract to this country countless multitudes of foreign workmen. They would rush hither as fast as fleets of steamers could bring them, and quickly swamp the demand for extra labor caused by short work. In a little while they would be soliciting employment at reduced wages, and offering to work for ten hours a day for probably half the pay that had at first been demanded for six hours' work, and this by reason of the over-supply of labor. But the panacea would fail to cure from the operation of another cause. It is an axiom that "dear labor makes dear goods." The effect of large wages and small work would be to greatly increase the cost of production and the price of manufactures in proportion to the enhancement of labor prices; the demand for such goods would necessarily decline, because the remainder of the community cannot afford to buy as large a quantity of artificially dear fabrics. Rents, too, would advance in the same degree that the cost of building houses increased, and the number of new structures would greatly decline, and that would cut off labor. Merchants would refuse to buy the excessively dear domestic goods produced under these circumstances, but would import what merchandise they needed, and if the trades unionists undertook to double up the tariff, in order to prohibit importation, the great agricultural masses would sternly resist being thus fleeced for the benefit of any city classes of producers.

The farmers constitute one full half of the American people, and they furnish one full half of the market for the productions of the town. Their power to buy domestic goods is limited strictly to the amount of money they receive for their crops. The cheaper goods are, the more the farmer can purchase, and conversely, the dearer, the fewer. The trades-union idea of short work and long pay would cut off a large part of this market provided by the farmers, leaving their dear goods unsold, and this would result in throwing multitudes of workmen out of employment and on to the streets; the farmers cannot be overcharged by the town artisans without the latter being punished for it by loss of market. This is a law of trade which the framers of our tariff are apt to overlook, and the railroad magnates who are practising the principle of charging for freight and fare "all that the tariff will bear," will do wisely to reflect, that the higher their tolls are on agricultural products the less return freight or general merchandise they will carry, because their extortion will cripple the farmer's ability to pay for goods or travel on their roads. Fleecing the farmers is not the best policy on the part of either the manufacturers or the railroads.

The arguments Mr. Medill makes use of are, it will be seen, altogether one-sided, and I only give them space from a desire to present you with what has been said for and against the scheme of shortening the hours of labor. A much fairer consideration of the subject is that which was made by William J. Noble, of New York City, in a pamphlet which, for its concise and plain presentation of the subject, meets my approval, and will, I am sure, commend itself to your favor:

> Believing that the "depression of trade," and also the "eight-hour movement," are the two important issues of the day, I claim that the enforcement of the latter is the only direct relief for the former, inasmuch as the markets are glutted with all kinds of goods, and still manufacturers and corporations, in their blind cupidity, speed their machinery to its utmost capacity ten hours per day, exciting competition, cheapening goods, and reducing prices until the manufacturing of staple goods affords no profit, from which condition they invariably seek relief by a further reduction of wages, which is generally followed by strikes and the shutting down of mills. Yet, as consumption continues during these suspensions of production, demand naturally gains a stride toward an equilibrium with supply; but soon necessity compels labor to resume work at reduced wages, and again on goes over-production, with the advantage to capital of a more firm market and cheaper labor. In this regard strikes generally terminate to the advantage of capital and detrimental to labor. But as a natural consequence, when supply is in excess of demand, the markets are soon again glutted, many merchants necessitated to disgorge at ruinous prices, and trade and labor are depressed by the many evils that naturally follow such a state of affairs.
>
> All these, I claim, are the natural consequences of our over-production, which has emanated from the introduction of improved machinery and other labor-saving and fast-producing facilities, of which the capacity for production have reached a stage when it is evident we can no longer (in keeping with the law of supply and demand) provide ten hours per day remunerative employment to all who depend upon employed labor for their living. And if capital and labor are to hold an equality of dignity, we must necessarily make a further retrenchment of labor—to, say, eight hours per day; for so long as capital lays claim to control labor, so long is it but just for labor to claim that capitalists should be wise and generous enough to study the laborers' interests as well as their own.
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> Although all wealth emanates from labor, yet labor should not be unreasonable in its demands on capital; for as there can be no mutually satisfactory arrangement instituted that is not mutually beneficial to both capital and labor, it is essential that capital and labor should alike understand how a retrenchment of labor to eight hours per day would affect respective interests:
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> *First*—Contemplating the effects the proposed retrenchment of labor would naturally have on capital, we would be relieved from over-production and the constant fluctuations of prices which are caused by alternate over-production and suspensions. We would have a more regular and better demand for our productions, firmer and steadier markets, confidence in commercial interests would be restored, and prices would advance until they attained a standard 20 per cent higher than present prices. This would be the natural consequence of the retrenchment of labor to eight hours per day, consequently labor would likewise advance 20 per cent above its present standard. As the value of supply is estimated by demand, the retrenchment of labor and production from ten to eight hours would enhance the value of the same as ten is to eight, and as it would afford capital steady business it would also afford labor steady employment, and thus be a mutual benefit to capital and labor.
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> In contemplating labor as it would be affected by the proposed retrenchment, we encounter an obstacle at the outset, inasmuch as it is necessary in order to insure the general adoption of eight hours as the standard day's work, a sacrifice must be made, either by capital or labor, or both; but, knowing the nature of man, the perversity of those who govern, and that the dominant spirit of avarice, cupidity, and self is strongest in wealth and capital, hence I despair of the success of an appeal to capital to make the sacrifice. Nor is it best or just that capital should make the sacrifice, for under the present state of affairs capital cannot remuneratively pay for eight hours' labor; consequently, if labor would enjoy the benefits that must naturally follow the retrenchment, some labor must lead in the movement, and institute eight hours as the standard day's work, by submitting to a reduction of 20 per cent in wages.
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> This reduction of wages will at the outset have a tendency to discourage many low wage operatives and laborers from joining in the eight-hour movement; but all such should remember that it would be only for a short time that they would be required to accept the reduced wages, for as soon as the present stock of goods in the market produced under the ten-hour system was turned in the hands of consumers (which would require but a few months) then would prices and consequent wages advance, as I have stated, to 20 per cent more than you now get for ten hours.
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> As this is a rule that is best understood by experience, we will refer to the time when fourteen hours constituted a day's work, and the wages that were then paid to skilled and unskilled labor throughout America and Europe. Note the improvement in trade and the advance of wages that followed the change from fourteen to twelve hours as a day's work. And, again, the happy result of the change from twelve to ten hours as the standard day's work, when wages within a short time advanced twenty-five per cent; and now that the improved facilities

employed in the manufacture of all kinds of goods have so increased our productions that we now find it necessary to make a further retrenchment of labor to eight hours per day, and, when once started, will soon become general throughout the country in all manufacturing business. One of the grounds of objection taken by capitalists against the eight-hour movement is that it would kill our export trade. This, however, is too sweeping a claim, since it could only materially affect our export trade in cotton goods; and when we consider the small portion of these goods that we export, and the strenuous effort it requires of capital and labor to compete for this, I doubt if it is a benefit to us, when we know that an advance of cotton goods of two cents per yard would not affect the poorest woman in buying a calico dress, and would be a benefit to the capital and labor employed in that industry, as seven is to five, and while we do no more expect the agriculturists and many other vocations to observe the eight-hour standard than they now observe the ten-hour standard day's work; consequently, the retrenchment could have no effect on our export trade in beef, cheese, butter, hops, wheat, and cotton. Even England did continue to work ten hours per day, but we have reason to know that England would gladly follow us in the eight-hour movement.

As to the prophecy of drunkenness, we know the reverse. Statistics and experience prove that constant work for long hours, or over-exertion, causes exhaustion, and creates a desire for strong artificial stimulants (such as alcoholic liquors), produce mental incapacity, general insensibility, grossness of feeling and perception, with disease and shortened life. That the intelligence of the working classes would improve with the advantage of more leisure time we have every reason to believe, and that political tricksters and shameless demagogues could no longer turn their ignorance to the advantage of political party power. They would better understand the causes of their evils and the remedies they ought to apply, and instead of considering machinery a detriment to labor, they would realize it as the greatest benefit to them, exactly as the elements of fire and water can be made beneficial or injurious to us just as we put ourselves in right or wrong relations to them. It has been computed, says Dr. Franklin, that if every man and woman would work four hours each day on something useful, that labor would be sufficient to procure all the necessaries and comforts of life; want and misery would be banished out of the world, and the rest of the twenty-four hours might be leisure and pleasure; but as Dr. Franklin computed one hundred years ago, with our present facilities, were it possible for all to perform their share of useful work, two hours would suffice.

The preceding pamphlet was read before the Senate Committee on Education and Labor, and was, by the Chairman, accepted as a strong argument in favor of the eight-hour law, and as such, I am quite willing to leave it with you.

In looking over the factory laws of the different States, I find that the Legislature of New Hampshire has provided, that "no person shall be employed more than ten hours per day, except in pursuance of express contract requiring longer time."

Massachusetts provides that the hours of labor shall not exceed sixty in a week.

Rhode Island has legislated that, "ten hours' work in any one day constitutes a legal day's work, unless otherwise agreed by the parties to the contract for same."

Connecticut provides that "eight hours constitute a legal day's work, unless otherwise agreed upon."

New York says plainly that "eight hours constitute a legal day's work, except for farm and domestic labor. Overwork for extra compensation is permitted."

New Jersey has provided that "ten hours per day constitute a legal day's work in all cotton, woolen, silk, paper, glass, and flax factories, and in manufactories of iron and brass."

Pennsylvania's laws provide that "eight hours constitute a legal day's work, in absence of special contract, except for farm labor and labor by the year, month, or week. Ten hours constitute a legal day's work in cotton, woolen, silk, paper, bagging, and flax factories."

Illinois has a law that "eight hours of labor constitute a legal day's work in all mechanical trades, arts, and employments, and other cases of labor and service by the day, except in farm employments, or where there is no special contract or agreement to the contrary."

You will see by the foregoing abstracts that the subject is no new one in the halls of legislation. You will have seen also by the remarks made by the workingmen themselves, which are quoted in Chapter VI, that the wish to have a curtailment of hours is almost without exception.

In the press of my other duties in connection with the bureau, I have not been able to give this subject all the attention it deserves, but I propose during the coming year to make this question one of thorough investigation, and in my next report will present you with the result of my researches and the recommendations I deduce from them. I feel, however, that I should not have done my duty had I omitted the above preparatory reference to a subject of which I am anxious you should appreciate the importance.

For the benefit of such members as are interested in the subject of labor legislation I append a brief summary of the factory laws of the different States, which will indicate to what extent the principles of English factory legislation have been adopted in America. The States named are the only ones in which factory laws exist:

Maine.—No child can be employed or suffered to work in a cotton or woolen manufactory without having attended a public or private school, if under the age of twelve years, four months; if over twelve and under fifteen years of age, three months of the twelve next preceding such employment each year. A teacher's sworn certificate of attendance, filed with the employer, constitutes the proof of schooling. A fine of $100 is imposed for a violation on the part of the employer of the provision of the law.

No person under the age of sixteen years can be employed by any corporation more than ten hours a day. The penalty for violating this provision is $100.

Factories more than two stories in height, where workmen are employed above the first story, must be provided with outside fire escapes satisfactory to municipal officers. (See Chap. 48, Revised Statutes; Chapter 221, Acts of 1878; Chapter 49, Acts of 1880.)

New Hampshire.—No child under fifteen years of age shall be employed more than ten hours per day, without written consent of parent or guardian. No person to be employed more than ten hours per day, except in pursuance of express contract requiring longer time. No child under ten to be employed by any manufacturing corporation. Children under sixteen not to be employed in factories unless they have attended school twelve weeks during preceding year; and no child under said age shall be employed (except in vacation time) who cannot write legibly and read fluently in the readers of the third grade. No child under fourteen to be employed unless he has attended school six months, or the school of his district the whole time it was kept; and no child under twelve who has not attended the school of his district the whole time it was kept. (See General Statutes, Chapter 187; Chapter 21, Acts of 1879; Chapters 42 and 56, Acts of 1881.)

Vermont.—Children under ten not to be employed at all; under fifteen, not more than ten hours per day; between ten and fifteen, not to be employed in mill or factory unless they have received three months' schooling the preceding year. (See General Statutes, Chapters 40 and 202.)

Massachusetts.—No child under ten years of age shall be employed in any manufactory, mechanical, or mercantile establishments in the commonwealth. No child under fourteen years of age shall be so employed, except during the vacations of the public schools, unless during the year preceding such employment he has, for at least twenty weeks, attended some public or private day school; nor shall such employment continue unless such child in each and every year attends school as aforesaid; and no child shall be so employed who does not present a certificate, made by or under the direction of the school committee, of his attendance at school as provided.

Employers shall require and keep on file a certificate of the age and place of birth of every child under sixteen years of age employed and the amount of his school attendance during the year next preceding such employment. The penalty for employment of children, contrary to these provisions, is not less than $20 nor more than $50. Truant officers are obliged to visit establishments and inquire into the situation of the children employed, and may demand the names of children and the certificate of age and school attendance. Children under fourteen years of age who cannot read and write are not to be employed while public schools are in session; parents or guardians permitting such employment are subject to a fine of not less than $20 nor more than $50.

Employers requiring from employés, under penalty of forfeiture of wages earned, a notice of intention to leave, shall be liable to like forfeiture if employé be discharged without similar notice.

Whoever, by intimidation or force, prevents or seeks to prevent a person from entering into or continuing in the employment of a person or corporation, shall be punished by a fine of not more than $100.

Employers are not to contract with employés for exemption from liability for injuries resulting from employer's own negligence.

No minor under eighteen years of age and no woman shall be employed in laboring in any manufacturing establishment more than ten hours in any one day, except when it is necessary to make repairs to prevent the interruption of the ordinary running of the machinery, or when a different apportionment of the hours of labor is made for the sole purpose of making a shorter day's work for one day of the week; and in no case shall the hours of labor exceed sixty in a week. The penalty for a violation of this provision is not less than $50 nor more than $100.

The belting, shafting, gearing, and drum of all factories, when so placed as to be dangerous to persons employed therein while engaged in their ordinary duties, shall be, as far as practicable, securely guarded. No machinery, other than steam engines, in a factory, shall be cleaned while running, if objected to in writing by an inspector. All factories shall be well ventilated and kept clean. The openings of all hoistways, hatchways, elevators, and well-holes upon every floor of a factory or mercantile or public building, shall be protected by good and sufficient trap-doors or self-closing hatches and safety-catches. All elevator cabs or cars shall be provided with some suitable device for securely holding the cabs in case of accident to the hoisting machinery.

All manufacturing establishments, three or more stories in height, in which forty or more persons are employed, unless supplied with a sufficient number of tower stairways, shall be provided with sufficient fire escapes, properly constructed upon the outside thereof, and connected with the interior by doors or windows, with suitable landings at every story above the first, including the attic, if the same is occupied for workrooms. Such fire escapes shall be kept in good repair and free from obstruction.

Every room above the second story in factories or workshops in which five or more operatives are employed shall be provided with more than one way of egress, by stairways on the inside or outside of the building; and such stairways shall be, as nearly as may be practicable, at opposite ends of the room. Stairways on the outside of the buildings shall have suitable railed landings at each story above the first, and shall connect with each story of the building by doors or windows opening outwardly; and such doors, windows, and landings shall be kept at all times clear of obstruction. All main doors, both inside and outside, must open outwardly, and each story must be amply supplied with means for extinguishing fires.

Every building three or more stories in height, in whole or in part used for a tenement for more than four families, or a lodging house, shall be provided with a sufficient means of escape in case of fire. No explosive or inflammable compound shall be used in any factory in such place or manner as to obstruct or render hazardous the egress of operatives in case of fire.

Persons violating these provisions as to buildings are liable to a fine of not less than $50 nor more than $100. Females employed in manufacturing establishments must be provided with seats, and be permitted to use them when not engaged in the duties for which they are employed. This also applies to stores.

For the enforcement of all these provisions the Governor appoints two or more members of the district police (a State force) to act as inspectors of factories and public buildings. They may enter all buildings used for public or manufacturing purposes, examine methods of protection from accident, means of escape from fire, and make investigations as to the employment of women and children. Fire escapes, etc., are to be constructed under the approval of one of the inspectors. (See Chaps. 48, 74, 103, 104, Public Statutes; and 150, 208, 266, Acts of 1882.)

Rhode Island.—No child under twelve years of age can be employed in any manufacturing establishment; no child under fifteen, unless he has attended school at least three months the preceding year; and no such child shall be employed for more than nine months in any year. No child between twelve and fifteen years of age shall be employed in any factory more than eleven hours in any day, nor before five o'clock in the morning, nor after half-past seven in the evening. The violation of these provisions is punished by fine of $20. Ten hours' work in any one day constitutes a legal day's work, unless otherwise agreed by the parties to the contract for same. Town and city councils may pass ordinances requiring fire-escapes on factories in which workmen are employed above the second story. (See General Statutes, Chap. 38.)

Connecticut.—No child under fourteen shall be employed in any business, unless such child shall have attended some day school for sixty days during preceding year, six weeks of such attendance to be consecutive. It is the duty of "school visitors," in every town, once or more in each year, to examine into the situation of children employed in manufacturing establishments to see if provisions of law are complied with. Parents and guardians must send children to school the legal time; violation punishable by fine of $5 for each week's neglect.

Employer of child under fourteen must have a certificate of child's attendance at school according to law. No child under fifteen to be employed in factories more than ten hours per day, or fifty-eight hours per week, under penalty of $50.

Each story above the second story of factories and workshops must be provided with more than one flight of stairs inside, or outside fire escapes, satisfactory to Selectmen or Fire Marshal of town.

Eight hours constitute a legal day's work, unless otherwise agreed upon. (See General Statutes, Title 14, Chapter 6; Chapter 37, Acts of 1880; Chapter 80, Acts of 1882.)

New York.—Children under fourteen are not to be employed during school hours unless they have attended school at least fourteen weeks during year preceding; the employer to have certificate of such school attendance. Eight hours constitute a legal day's work, except for farm and domestic labor. Overwork, for extra compensation, is permitted. (See Chapter 385, Laws of 1870; Chapter 421, of 1874; and Chapter 372, of 1876.)

New Jersey.—No child under ten years of age shall be admitted to work in any factory; and no minor shall be holden or required to work more than ten hours on any day or sixty hours in any week; penalty for violation of latter provision is $50. Ten hours per day constitutes a legal day's work in all cotton, woolen, silk, paper, glass, and flax factories, and in manufactories of iron and brass. (See Acts of 1851, Chapters 17 and 18.)

Pennsylvania.—Eight hours constitute a legal day's work, in absence of special contract, except for farm labor and labor by the year, month, or week. Ten hours constitute a legal day's work in cotton, woolen, silk, paper, bagging, and flax factories. No minor under thirteen shall be employed in any such factory under penalty of $50. No child between thirteen and sixteen years of age shall be employed more than nine months in any one year, who shall not have attended school at least three consecutive months in the same year. No minor shall by any contract be employed in any of said factories for more than sixty hours per week, or an average of ten hours per day. Penalty for violation of this provision not to exceed $50. Factories in which employés are at work in third or higher story, must have permanent external fire-escapes, satisfactory to Fire Commissioners and Fire Marshal of district. (See Acts of 1849, 1868, 1879.)

Maryland.—The law prohibits the employment of children under sixteen years of age in factories for more than ten hours per day, under penalty not exceeding $50.

Ohio.—No child under fourteen shall be employed in mills or mines during school hours, unless he has received at least twelve weeks' schooling during the year preceding, and employers must have certificate to that effect; two weeks' attendance at a half-time or night school to be considered equivalent to one week at a day school. Whoever compels a woman, or a child under eighteen, or permits a child under fourteen, to labor in a mechanical or manufacturing business more than ten hours per day, shall be fined not less than $5 nor more than $50. (See Revised Statutes, Sections 4023, 4024, 4029, 6986.)

CHAPTER XII.

SCHOOL STATISTICS.

The following report was furnished this office by the State Superintendent of Public Instruction:

State of California—Department of Public Instruction.

Office of State Controller,
Sacramento, August 3, 1883.

Hon. W. T. Welcker, *Superintendent Public Instruction:*

Sir: In compliance with an Act of the Legislature, I have the honor to report as follows:

The securities held in trust for the School Fund by the State Treasurer, consists of bonds of the State of California, amounting to one million seven hundred and thirty-seven thousand five hundred dollars ($1,737,500), together with bonds of different counties of this State, aggregating two hundred and forty-one thousand four hundred dollars ($241,400), which are described as follows:

State Capital Bonds, 1870—seven per cent	$236,000 00	
State Capital Bonds, 1872—seven per cent	115,000 00	
State Funded Debt Bonds, 1873—six per cent	1,386,500 00	
		$1,737,500 00
Humboldt County Bonds—nine per cent	$25,000 00	
Mendocino County Bonds—eight per cent	10,000 00	
Napa County Bonds—seven per cent	60,000 00	
Sacramento County Bonds—six per cent	26,400 00	
San Luis Obispo County Bonds—eight per cent	50,000 00	
Santa Barbara County Bonds—ten per cent	20,000 00	
Solano County Bonds—seven per cent	9,500 00	
Stanislaus County Bonds—eight per cent	9,000 00	
Tehama County Bonds—eight per cent	11,500 00	
Tulare County Bonds—ten per cent	20,000 00	
		241,400 00
Total securities held in trust for the School Fund		$1,978,900 00

On July 24, 1883, there was called in and redeemed from the securities held in trust for the School Fund, Solano County Bond, No. 6, amounting to $500, the proceeds of which have been paid into the State School Land Fund, to be reinvested in other bonds.

The money in the State Treasury belonging to the State School Fund, subject to apportionment, is three hundred and ninety-one thousand thirteen and sixty-five one hundredths dollars ($391,013 65), as follows:

Balance unapportioned February 16, 1883		$748 89
Received from property tax	$132,489 69	
Received from State poll tax	177,508 17	
Received from interest on bonds held in trust	59,276 50	
Received from interest on State school lands	22,650 48	
		391,924 84
		$392,673 73
Paid restitution of interest on State school lands not the property of the State	$1,088 51	
Paid cost of collecting interest on State school lands	571 57	
		$1,660 08
Total amount subject to apportionment August 3, 1883		$391,013 65

JOHN P. DUNN, Controller.

OFFICE OF SUPERINTENDENT OF PUBLIC INSTRUCTION,
SACRAMENTO, August 7, 1883.

In accordance with the foregoing statement of the Controller, I have this day apportioned the State school money to the several counties as follows:

Number of census children between five and seventeen years of age entitled to receive school money, 222,846; *amount per child,* $1 75; *amount apportioned,* $389,980 50.

COUNTIES.	No. Children.	Amount.	COUNTIES.	No. Children.	Amount.
Alameda	17,376	$30,408 00	Sacramento	8,121	$14,211 75
Alpine	92	161 00	San Benito	1,603	2,805 25
Amador	2,815	4,926 25	San Bernardino	3,117	5,454 75
Butte	3,982	6,968 50	San Diego	2,221	3,886 75
Calaveras	2,194	3,839 50	San Francisco	58,061	101,606 75
Colusa	3,089	5,405 75	San Joaquin	5,829	10,200 75
Contra Costa	3,382	5,918 50	San Luis Obispo	2,844	4,977 00
Del Norte	458	801 50	San Mateo	2,434	4,259 50
El Dorado	2,287	4,002 25	Santa Barbara	3,455	6,046 25
Fresno	2,985	5,223 75	Santa Clara	9,487	16,602 25
Humboldt	4,149	7,260 75	Santa Cruz	3,972	6,951 00
Inyo	518	906 50	Shasta	2,326	4,070 50
Kern	1,347	2,357 25	Sierra	1,133	1,982 75
Lake	1,556	2,723 00	Siskiyou	1,847	3,232 25
Lassen	841	1,471 75	Solano	4,975	8,706 25
Los Angeles	12,428	21,749 00	Sonoma	7,572	13,251 00
Marin	2,177	3,809 75	Stanislaus	2,098	3,671 50
Mariposa	995	1,741 25	Sutter	1,349	2,360 75
Mendocino	3,534	6,184 50	Tehama	2,521	4,411 75
Merced	1,374	2,404 50	Trinity	677	1,184 75
Modoc	1,191	2,084 25	Tulare	3,646	6,380 50
Mono	503	880 25	Tuolumne	1,670	2,922 50
Monterey	3,513	6,147 75	Ventura	1,607	2,812 25
Napa	3,281	5,741 75	Yolo	3,154	5,519 50
Nevada	4,990	8,732 50	Yuba	2,149	3,760 75
Placer	2,902	5,078 50			
Plumas	1,019	1,783 25	Totals	222,846	$389,980 50

W. T. WELCKER,
Superintendent Public Instruction.

Up to date, ending July 20, 1883, there were 687 teachers in the public schools of San Francisco, who received $638,637 53. Of these the pay-roll shows that—

155 teachers received from	$50	to	$60	per month
288 teachers received from	60	to	70	per month
170 teachers received from	70	to	90	per month
613 teachers received from	50	to	90	per month

Nearly all the remaining teachers are either principals, vice-principals, or teachers in the high schools.

The average pay of the 687 teachers in the department, taking all the high salaries of the principals with the low of the primary assistants, does not exceed $960 per annum, or $80 a month. Excluding principals, 29 of whom receive $135 a month, and 16 from $175 to $200 a month, and excluding the teachers in the high schools, most of whom receive $160 a month, it will be found that the great mass of the teachers are paid an average of but $840 a year. The compensation of nine tenths of them ranges from $50 to $90 a month.

CHAPTER XIII.

MINES AND MINING.

The shrinkage of bullion production, and the partial subsidence of stock gambling, have, by many, been supposed to denote a corresponding decadence in the mining industries of California, than which nothing could be more erroneous, the business of mining for the precious metals having never been in a more healthful and generally satisfactory condition than it is at present. There are now over thirty thousand men engaged in this branch of business in the State, and it may safely be affirmed that a like number of laboring men cannot elsewhere be found who are as well paid for the work they perform as these California miners, their yearly earnings averaging over $500 per man. Of this force, which is making such liberal earnings, nearly one half are Chinamen, who, in defiance of the letter and purpose of the law, occupy our mineral domain and exhaust it of resources that were intended to be preserved as an inducement for the better races to come in and settle permanently on these gold-bearing lands.

The advocates of Chinese immigration have defended the presence of these Orientals here, on the ground that they were needed for the performance of certain menial and poorly paid kinds of labor which the whites decline to engage in. Fifteen thousand Mongolians betaking themselves to our placer diggings, discloses how very flimsy is the foundation on which this sort of argument rests. That we permit these pagans to so take possession of our mines and deplete them to the detriment of our own kind shows, too, how little ground there is for the charge of hostility to the Chinese so often and so ignorantly made against our people. The inhabitants of the mining districts might, at any time, drive these Chinamen from their claims and themselves take possession of them, were they so disposed, and yet nothing of the kind has ever been done or attempted. The truth is, our miners are much more tolerant towards this race than, under the circumstances, could be expected.

While the Chinese so confine themselves almost wholly to the placers, a large proportion of the whites are engaged in vein mining, either for gold or silver, the latter, which for the past year or two, has received much attention, promising to soon become a very important industry in California.

Of the bullion produced in this State last year, valued at $18,000,000, nearly $3,000,000 consisted of silver.

Besides so large a number of men mining for the precious metals, we have some eight or ten thousand engaged in other branches of mining and in pursuits connected therewith. Thus, we produce in California, annually, quicksilver to the value of $1,200,000; borax, a part of it being the product of Nevada, to the value of $500,000; iron, to the value of $500,000; copper, petroleum, salt, and various other minerals, and metals to the aggregate value of several million dollars.

What renders these several branches of mining of especial advantage to the State consists in the fact that most of the money expended in their prosecution is on account of labor.

The sustenance they afford other industries is also a matter of great economic importance. Withdraw all these men from mining, and set them to tilling the land, thereby converting them into growers, instead of consumers of agricultural products, and how damaging would the change prove to the California farmer; or set them to work in the factories and machine shops, and how disastrous would it prove all round—the operatives with less work to be done and more men to do it—the proprietors with more things to sell and fewer people to buy them.

It is to the interest of all then, that mining in all its branches should be fostered and encouraged, both as a means of absorbing labor and enlarging the market for its products.

THE STATE MINING BUREAU—NEED FOR AN INSTITUTION OF THIS KIND.

By reason of the rapid declension of placer mining in California, considerable numbers of men were, year by year, forced to abandon that business and engage in other pursuits. Owing to this condition of things, the necessity of developing the other mineral resources of the State and opening up new avenues for the employment of labor became early apparent. The sentiment that some action should be taken on the part of the State, calculated to promote these ends, first found expression in the law enacted in 1880, establishing the State Mining Bureau and the office of State Mineralogist, and, again, in the passage of an additional Act, two years later, creating the Bureau of Labor Statistics, the former designed to enlarge and diversify our productive industries, and the latter to further the interests of the producing classes. In the adoption of these measures, California takes the advanced position, that whatever most concerns the welfare of the masses ought to most concern the State, a doctrine that, practically carried out, makes the Government literally the servant of the people, which it ought to be in fact as well as in name.

It has been the mistake of California that she has, in times past, depended too much on the production of a few staples, such as gold, wheat, and wool, a policy that, steadily adhered to, inevitably results in the enrichment of the few and the impoverishment of the many, inasmuch as no community can prosper that is not largely self-sustaining in the matter of its smaller and more numerous wants. A failure to accomplish this has tended to greatly retard both the social and industrial progress of our people. California, for many years, sustained towards the older States of the Union a sort of colonial relationship, buying of them freely without having experienced much in the way of reciprocal advantage, a great deal of what she so bought having consisted of things that might and ought to have been made at home. This state of dependence not only tended to keep us poor, but, by discouraging domestic manufactures, tended to prevent us helping ourselves.

During the past few years, however, a considerable change has been wrought in this respect, so many new industries having been inaugurated of late, that California is able to make now a very fair showing as a manufacturing State.

She has also begun, meantime, to look more carefully after her store of the useful minerals and metals, a work that, under the conduct of Professor Henry G. Hanks, State Mineralogist and ex officio manager of the State Mining Bureau, is making good progress.

As this institution is likely to prove an efficient co-worker with the Bureau of Labor Statistics, some mention of its objects and operations may here very properly be made.

THE CREATION OF THE STATE MINING BUREAU—ITS OBJECTS, MANAGEMENT, AND WORK ACCOMPLISHED.

The law establishing the State Mining Bureau, among other things, provides that there shall be collected by the State Mineralogist and preserved for study and reference, specimens of all the geological and mineralogical substances found in the State, especially those possessing economic and commercial value, which are to be marked, arranged, classified, and described; it being made the duty of this official to collect as he may be able, and in a like manner preserve rocks, minerals, and fossils of other States, Territories, and countries; also, to make analytical assays as required; collect a library, procure models and drawings of mining machinery, correspond with schools of mining and metallurgy, visit the mining regions of the State and obtain information in regard to the same, and report on the whole to the Governor at the close of each year.

Professor Hanks since filling this double position, to which he was appointed by the Governor of the State, as the law provides, has discharged the duties pertaining to it ably and well, the State having received the full benefit of his long experience as a mineralogist, assayer, and analytical chemist. Professor Hanks is notoriously a worker—active, tireless, and thoroughly practical; as his time, his thoughts, his entire energies were formerly given to his profession, so are they now wholly devoted to the public service. He is zealous and enthusiastic in his calling without being at all visionary. What he has accomplished since holding his present position, will best appear from a brief recital of the history of the Mining Bureau, and its condition as we now find it.

THE MUSEUM.

The most noteworthy feature of this institution, located at 212 Sutter Street, consists of the extensive cabinet of mineral and other specimens, gathered mainly from California, but largely, also, from other parts of the world. Some of these specimens are very rare and all possess more or less value, as tending to illustrate the many forms of our natural wealth. This is the handsomest and probably the most valuable cabinet of the kind yet collected on the coast. Indeed, it is doubtful if anything more choice and varied has ever been gotten up elsewhere. It is, in fact, of such miscellaneous character, containing so much that is strange and curious as well as useful and instructive, that it has very properly been termed a *museum*. There is in this repository a great deal that relates to the arts and sciences as well as to geology, mineralogy, and other branches of natural history. These specimens, amounting now to over 6,000, have all been classified, labeled, and catalogued; the smaller and more interesting being displayed in large mounted glass cases, while the more bulky have been boxed up and stored away, there being in the present quarters no room for placing them on exhibition.

While so valuable, this cabinet has cost the State but little, the most of its contents consisting of gratuitous contributions or having been received in exchange for others sent to the donors, or else obtained by the State Mineralogist himself while visiting different parts of the country.

To whosever care this magnificent collection may come to be committed hereafter, it will be an easy matter to preserve it in good shape and continue its growth, now that all parts of it have been arranged with system and brought into good working order.

The similar collection owned by the State now deposited at Sacramento should, as soon as practicable, be removed to the city and be added to the museum of the Mining Bureau, where hundreds of appreciative visitors will see it for every one that will be likely to ever get a glimpse of it in the excluded and little frequented alcoves of the Capitol.

DIMINISHING REVENUES AND A DEPLETED EXCHEQUER.

The law creating the Mining Bureau provides that a fund for its support shall be raised by the imposition of a tax on all sales of mining shares made at the several stock boards. For a time the revenues derived from that source sufficed to meet the necessary expenditures of the institution. Soon, however, they began to fall off at a rate that caused its usefulness to become seriously crippled, and continuing to diminish, shrunk at last to proportions so small that some of the principal objects for which the bureau had been founded were necessarily defeated.

First, the chemist employed for the determination of minerals sent in for the purpose, had to be dismissed; next, the services of a janitor had to be dispensed with, and finally the Secretary had to be put on half salary, working for the bureau only on alternate days. To such strait has the head of the bureau been reduced that he can impart now only to a limited extent the information that the mining public, having been accustomed to receive, still continues to ask for and expect.

IMPORTANCE OF THE BUREAU, AND REASONS WHY IT SHOULD BE KEPT UP.

It is much to be regretted that this institution could not have received a support commensurate with its merits, seeing its aims are largely in the interest of the working classes. The prospector and miner, puzzled often as to the character of the minerals they meet with, and not able always to have the same accurately determined, found here just the aid and counsel they so much stand in need of. The time has come when the cheaper mineral products of the State ought to be utilized to a greater extent than has yet been done, and it is only fair that the public authorities should do something towards promoting that end. Many of these products are new to our people, who are not only ignorant of their character, but also of their economic value, and therefore require to be informed on all these points before attempting to mine or otherwise handle them. Some consist of base ores, the successful working of which involves skill and the employment of costly apparatus and difficult manipulations, such as parties should not engage in or undertake to provide without first taking counsel of some capable and thoroughly reliable adviser, such as the State can well afford and ought to supply. And in this connection it may be pertinent to observe that, while the State Mineralogist has in many cases been of great service to those seeking his advice, putting them on the road to success, so, on the other hand, has the information imparted by him saved many from engaging in enterprises that could result only in failure. In a country so new, and with a population so little experienced in searching after and judging of minerals, there is nearly as much need of a monitor to prevent the novice going wrong as to help him go right. A good deal of money has been lost in California through attempts made to utilize certain mineral products, simply because the business was gone about ignorantly.

Nevertheless, the fact stands that we ought to be exporters of more of these products than we really are. Besides supplying home requirements, we ought to ship to foreign markets chromic iron, lead, copper, antimony, asphaltum, and ultimately, perhaps, manganese, asbestos, mica, graphite, etc., in much larger quantities than we do or ever have done. And the causes of our being so in fault ought to be inquired into, and, as far as practicable, removed. That a country abounding with the raw material of good quality should be importing iron, fire-bricks, glass, crockery, sulphur, soda and other salts, cement, plaster, marble, and various other commodities of the kind, as we are doing, indicates a lack of economy and thrift that requires prompt correction, since, besides the money sent abroad to purchase these articles being lost to the country, the laborer who should have been employed to produce them is, in a certain sense, deprived of his rights, or at least debarred from opportunities that justly belong to him.

Through the practice of this short-sighted policy there inures a loss to both the State and the individual. It is not always the business that pays the largest dividend to a few owners that is most deserving of encouragement. Some that yield their proprietors very little profit are yet of great public importance, because of the much labor they employ and the sustenance they afford other home industries. The iron company operating at Clipper Gap is of more consequence to the commonwealth than any gold mine in the State, for the reason that it employs more men, thereby giving wide distribution to its earnings, while it keeps large sums of money in the State that would otherwise be sent to other countries to buy iron.

No country possesses the useful metals and minerals in greater variety and abundance than California, and there has been manifested great remissness in that we have so long neglected to render these gifts more conducive to the general welfare.

Inquiry into the wants and conditions of labor accords with the spirit of the age.

The tendencies of our time are towards exact information bearing on the interests of the working classes, the resources of the State, and like economic questions. Hence the Bureau of Labor Statistics, the Mining Bureau, the Manufacturers Association, and various other organizations and movements of recent date, all directed to the fostering of our home industries, and the building up of a system of more diversified pursuits.

The museum connected with the Mining Bureau has come to be much frequented by all classes of people, more especially by strangers, scientists, and miners, visiting the city.

The latter repair to it for the purpose of examining the mineral specimens, and so educating the eye that they will be able to recognize them should similar kind be afterwards met with. Miners can, in some instances, even obtain from the bureau duplicate samples of ores and minerals, which being taken along and used for comparison, better enable them to determine the character of anything encountered when out prospecting; and thus the museum is becoming a training school for miners and students in mineralogy, as well as a place of instruction and amusement for the general public.

INQUIRY INTO ALL OUR ECONOMIC INDUSTRIES.

For several months past Professor Hanks, with such assistance as he could command, has been engaged making a careful examination of every considerable industry in the State, with a view to reporting on the condition and prospects of the same at an early day. While the report will be mainly occupied with a description of the mineral resources of the State, and various other industries, agricultural, commercial, manufacturing, and mechanical, will receive more or less attention, it being the design of the Professor that no important interest shall be wholly overlooked. As this latter class of subjects do not, however, come so wholly within the province of the State Mineralogist's duties, they will be treated of more briefly than mining matters, only the salient points being as a general thing presented.

But while some topics will be necessarily abridged, this report will not consist of old, carelessly compiled, and often used data, but will be fresh, original, and reliable, to which end the Professor and his assistants have gone to primary sources of information for these facts.

They have in no instance accepted the reports of the Census Agent, the Surveyor-General, or the County Assessor as authority, without having first verified the same by further inquiry, the necessity for which has in many cases been made strikingly apparent. With so much care exercised in collecting the information embodied in this paper, it will constitute a very valuable contribution to the economic literature of the day.

In many countries, possessing not a little of the mineral wealth of California, the Government extends every facility to those engaged in mining, going so far often as to offer liberal bounties for the discovery of new mineral deposits, or such as are otherwise of special importance. While our Government, very properly, has left the work of exploration to be effected by individual enterprise, it ought to aid such enterprise at least to the extent above indicated.

If the sum required for maintaining this Mining Bureau in its efficiency and integrity had been large; if the purposes it were intended to subserve had been of a mere speculative kind, not exposed to suffer from postponement; or if so much as a dollar had ever been wasted in the administration of its affairs, there would have been some excuse for such parsimony on the part of the State; but none of these things can be alleged against it; the institution is of the most utilitarian kind—it is an urgent necessity, while its funds, stinted and inefficient almost from the first, have been disbursed with the utmost prudence and frugality.

CHAPTER XIV.

EARNINGS AND EMPLOYMENTS.

From the various sources of information at my command, I ha been enabled to compile the following tabulated statements concerni the wage-rates received by the employés in nearly all the branch of manufacturing industries in the State; the average earnings ar employment hours of the various employés of the Central Paci Railroad, and the street railways of San Francisco, Los Angeles, ar Santa Rosa; and the number, condition, etc., of persons employed a large number of selected occupations.

TABLE I.

Employés in Mechanical and Manufacturing Industries (Chinese Excluded).

Occupation.	Wages Paid.				
	Maximum	Minimum	Average	With or Without Board	Per Day, Week, or Month
Asphaltum workers	$2 50	$1 50	$2 00	Without	
Awning makers	3 00	2 00	2 50	Without	
Employés in agricultural implements	2 50	2 00	2 25	Without	
Artificial flowers employés	50 00	30 00	40 00	Without	Mo
Bag (cotton) manufacturers	2 50	1 75	2 00	Without	
Bag (paper) manufacturers	2 50	1 75	2 00	Without	
Bakers	60 00	30 00	45 00	With	Mo
Brewers	150 00	60 00		Without	Mo
Blacksmiths	4 00	2 00	3 00	Without	
Boilermakers	3 00	2 00	2 50	Without	
Brass molders	3 00	2 50	2 75	Without	
Bookbinders	24 00	15 00	18 50	Without	W
Brick makers	35 00	30 00	32 50	With	Mo
Broom makers	3 00	1 75	2 25	Without	
Brush makers	3 20	2 00	2 50	Without	
Box (cigar) makers	3 00	2 00	2 50	Without	
Box (wood, packing) makers	2 50	2 00	2 25	Without	
Cabinet makers	3 00	2 25	2 62½	Without	
Candle makers	2 50	2 00	2 25	Without	
Canneries (fish, fruit, etc.)—men	2 50	1 50	2 00	Without	
Canneries (fish, fruit, etc.)—women	1 00	0 90	0 95	Without	
Canneries (fish, fruit, etc.)—boys, girls	0 50	0 50	0 50	Without	
Carpenters and joiners	3 50	2 00	2 75	Without	
Carpenters (ship)	3 00	2 00	2 50	Without	
Carriage and wagon makers	3 00	2 50	2 75	Without	
Calkers (ship)	3 50	3 00	2 25	Without	
Cement makers	60 00	40 00	50 00	Without	Mo
Cigar makers—per thousand	10 00	5 50	7 75	Without	
Cigar makers	3 25	1 50		Without	
Confectioners	50 00	30 00	40 00	Without	Mo

Table I—Continued.

Occupation.	Wages Paid.				
	Maximum	Minimum	Average	With or Without Board	Per Day, Week, or Month
Coffee and spice mills	$50 00	$35 00	$42 50	Without	Month
Coopers	3 00	2 25	2 62½	Without	Day
Coppersmiths	3 00	2 25	2 62½	Without	Day
Cutlers	65 00	45 00	55 00	Without	Month
Employés in distilleries	90 00	45 00	67 50	Without	Month
Employés in dairies	35 00	30 00	32 50	With	Month
Employés in glassworks	2 50	2 00	2 25	Without	Day
Glovemakers—men	3 00	2 00	2 50	Without	Day
Glovemakers—women	1 75	1 25	1 50	Without	Day
Gluemakers	60 00	40 00	50 00	Without	Month
Gunsmiths	3 50	2 00	2 75	Without	Day
Hat and cap makers—men	3 00	1 50		Without	Day
Hat and cap makers—women	1 50	0 90		Without	Day
Iron molders	3 50	2 50	3 00	Without	Day
Ink and mucilage makers	2 75	1 50	2 17½	Without	Day
Locksmiths	2 50	2 00	2 75	Without	Day
Employés in limekilns	35 00	30 00	32 50	With	Month
Machinists	3 50	2 50	3 00	Without	Day
Marblecutters	3 00	2 00	2 50	Without	Day
Employés in watch factories	65 00	45 00	55 00	Without	Month
Employés in match factories	35 00	25 00	37 50	Without	Month
Millers	80 00	45 00	62 50	Without	Month
Pattern makers	4 00	2 25		Without	Day
Employés in paper mills	50 00	35 00		Without	Month
Potters	35 00	30 00	32 50	With	Month
Employés in powder mills	2 50	2 00	2 25	Without	Day
Plumbers	$4 00	$2 50	$3 25	Without	Day
Employés in rolling mills	4 00	3 00	1 75	Without	Day
Ropemakers	2 50	2 00	2 25	Without	Day
Saddlers and harness makers	3 00	2 50	2 25	Without	Day
Sailmakers	4 00			Without	Day
Saltmakers	2 00	1 75	1 87½	Without	Day
Sash, door, and blind makers	3 50	2 50	3 50	Without	Day
Shingle makers	2 50	2 00	2 25	Without	Day
Shoemakers	3 00	2 00	2 50	Without	Day
Soda works employés	35 00			With	Month
Stonecutters	4 00	2 00	3 00	Without	Day
Tailors	3 50	2 50	3 50	Without	Day
Tanners	3 00	2 50	2 75	Without	Day
Tinsmiths	55 00	35 00	45 00	Without	Month
Upholsterers	3 00	1 75	2 37½	Without	Day
Wheelwrights	3 00	2 25	2 62½	Without	Day
Wine manufacturers	2 50	2 00	2 25	Without	Day
Willow and woodware employés	2 50	2 25	2 37½	Without	Day
Woolen mills—men	3 00	2 00	2 50	Without	Day
Woolen mills—women	1 75	1 50	1 62½	Without	Day
Woolen mills—boys	1 00			Without	Day
Woolen mills—girls	0 75			Without	Day

TABLE II.

Relating to Clerical and all other Skilled and Unskilled Labor not before Enumerated (Chinese Excluded).

OCCUPATION.	Wages Paid to Males.				Wages Paid to Females.				Per Day, Week, or Month.
	Maximum.	Minimum.	Average.	With or Without Board.	Maximum.	Minimum.	Average.	With or Without Board.	
Auctioneers*									
Advertising agents*									
Assayers and chemists	$150 00	$75 00		Without					Month
Barbers	21 00	12 00	$16 50	Without					Week
Bookkeepers in all departments	200 00	50 00		Without	$75 00	$35 00		Without	Month
Bricklayers	5 00	4 00	4 50	Without					Day
Bricklayers	75 00	45 00		Without					Month
Butchers	18 00	12 00		Without					Week
Clerks in banking institutions	200 00	60 00		Without					Month
Clerks in insurance offices	200 00	35 00		Without					Month
Clerks in lawyers' offices	100 00	25 00		Without					Month
Clerks in general merchandising	100 00	30 00		Without					Month
Clerks	80 00	40 00		Without					Month
Cooks	~~150 00~~	~~50 00~~		With					Month
Draughtsmen	10 00	4 00		Without					Day
Draymen	2 50	2 00		Without					Day
Dress and cloak makers					12 00	8 00	10 00	Without	Week
Engravers	5 00	3 00	4 00	Without					Day
Engineers (civil)	150 00	75 00		Without					Month
Engineers (stationary engines)	85 00	60 00		Without					Month
Engineers (mining)	200 00	100 00	150 00	Without					Month
Florists and gardeners	50 00	35 00		Without					Month
Fishermen	40 00	35 00		Without					Month
Gasfitters	21 00	15 00		Without					Week
Glaziers	4 00	3 00	3 50	Without					Day
Hod carriers	3 00	2 00		Without					Day
Horseshoers	21 00	15 00		Without					Week
Hostlers	40 00	30 00	35 00	Without					Month
Laborers	12 00	9 00		Without					Week
Lathers	3 00	2 50		Without					Day
Laundrymen	2 00	1 50	1 75	Without	1 25	1 00		Without	Day

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* On commission.

TABLE II—Continued.

OCCUPATION.	Wages Paid to Males.				Wages Paid to Females.				Per Day, Week, or Month.
	Maximum.	Minimum.	Average.	With or Without Board.	Maximum.	Minimum.	Average.	With or Without Board.	
Longshoremen (per hour)	$0 40	$0 30		Without					Hour
Lumbermen	45 00	30 00		Without					Month
Masons	4 00	3 00	$3 50	Without					Day
Milliners					$20 00	$8 00	$14 00	Without	Week
Painters (house)	3 50	2 50		Without					Day
Painters (fresco)	6 00	4 00	5 00	Without					Day
Plasterers	5 00	4 00	4 50	Without					Day
Printers	3 75	2 50	3 12½	Without					Day
Salesladies in stores					80 00	40 00	60 00	Without	Month
Seamstresses					25 00	20 00		Without	Month
Servants (domestic)	50 00	30 00	40 00	With	25 00	10 00		Without	Month
Telegraph operators	75 00	30 00		Without	45 00	25 00		Without	Month
Telegraph messenger boys	16 00	12 00		Without					Month
Waiters (restaurant, hotel, etc.)	50 00	35 00		With					Month
Watchmakers	45 00	30 00		Without					Month
Well borers (artesian)†									
Well borers (oil)†									
Wood carvers and turners	4 00	2 50	3 25	Without					Day
Wood cutters‡									

† Paid by the foot.
‡ Paid by the cord.

TABLE III.

Wages Paid per Day to Employés in Mines (Chinese Excluded).

OCCUPATION.	Maximum.	Minimum.	With or Without Board.
Asphaltum miners	$2 50	$2 00	Without
Coal miners	2 75	2 25	Without
Gold placer miners	3 00	2 50	
Gold quartz miners	3 00	2 50	
Gold hydraulic miners	3 00	2 50	
Silver miners	3 00	2 50	
Gravel miners	3 00	2 50	
Iron miners	3 00	2 50	
Marble miners	2 50	2 00	
Quicksilver miners	4 00	3 00	
Granite stone miners	2 50	2 00	
Limestone miners	2 50	2 00	

TABLE IV.

Wages Paid to Employés of Transportation on Land and Water (Chinese Excluded).

OCCUPATION.	Maximum.	Minimum.	With or Without Board.
Stage drivers	$50 00	$35 00	With
Teamsters hauling, etc.	45 00	30 00	With
Dairymen hauling, etc.	60 00	35 00	Without
Agents, railroad, stage, express, and steamboats*			
Men engaged in express companies	60 00	40 00	Without
Captains of steamboats and sailing vessels	200 00	85 00	With
Pilots	300 00	200 00	With
Pursers	150 00	75 00	With
Engineers	150 00	100 00	With
Freight clerks	100 00	75 00	With
Mates	80 00	40 00	With
Stewards	75 00	50 00	With
Cooks	100 00	30 00	With
Firemen	60 00	40 00	With
Sailors	35 00	25 00	

* Mostly commissions.

TABLE V.

Daily Average Wages of Wage-Workers.

Occupation.	Rate.
Brush makers*	$3 00
Broom makers	2 00 to 3 00
Box makers	2 25 to 3 50
Brass workers	2 75 to 5 00
Bookbinders	3 00 to 4 00
Bakers	2 50 to 4 00
Brick makers, all classes employed in brickyards	2 00 to 4 00
Block and pump makers	3 00 to 4 00
Brewers	2 50 to 3 50
Bellows makers	3 50 to 4 00
Bricklayers	4 00 to 5 00
Bricklayers, helpers	3 00
Blacksmiths, all kinds	2 50 to 4 00
Coopers	2 50 to 3 50
Curriers	3 00 to 5 00
Clerks, in retail stores	2 50 to 6 00
Corset makers, females	1 25 to 2 00
Car builders and repairers	3 00 to 5 00
Carpet cleaners and renovators	1 75 to 2 50
Coppersmiths	3 00 to 5 00
Street car conductors	1 50 to 2 50
Carriage makers, painters, trimmers, wood workers, etc.	3 00 to 5 00
Cigar makers	1 25 to 3 00
Horse-collar makers	2 50 to 3 50
Cabinet makers	3 00 to 4 00
Carpenters	3 00 to 4 00
Dyers	2 50 to 3 50
Carvers, ornamental wood	3 00 to 4 00
Chair makers	2 50 to 4 00
Car drivers, street cars	2 25 to 2 50
Engravers	3 00 to 5 00
Engravers, apprentices	1 50 to 2 00
Engineers	3 00 to 5 00
File makers	2 50 to 3 50
Fresco painters	4 00 to 5 00
Finishers	3 50 to 4 00
Fire-brick workers	3 50 to 5 00
Flour packers	2 50 to 3 50
Farriers	3 50 to 4 00
Furniture packers	2 50 to 3 00
Firemen	2 50 to 3 00
Granite cutters	3 50 to 4 00
Gas retort makers	3 00 to 4 00
Glove makers and cutters	2 50 to 4 00
Galvanized iron workers	3 50 to 5 00
Gas and steam pipe fitters	3 00 to 4 00
Grainers	3 50 to 5 00
Hammermen	3 00 to 4 00
Hammermen, helpers and drivers	2 50 to 3 00
Hatters	2 50 to 4 00
Hostlers	1 75 to 2 50
Harness makers	2 50 to 3 50
Harness makers, apprentices	1 25 to 1 75
Horseshoers	3 50 to 4 00
Hod carriers	2 50 to 3 00
Instrument makers	3 25 to 5 00
Joiners	3 00 to 4 00
Iron workers and railing makers	2 50 to 3 50
General tinsmiths	$2 25 to 3 50
Mechanics' helpers	1 75 to 2 50
Marble rubbers	2 00 to 2 25
Plasterers' laborers	2 50 to 3 00
Teamsters	2 00 to 3 00
Helpers in machine shops	1 75 to 2 25
Chippers	2 00 to 2 50
Brick wheelers in brickyards	2 00 to 2 25
Off-bearers in brickyards, boys	1 25 to 1 50
Brickyard workers	2 00 to 2 50
Laborers, common day	1 75 to 2 00
Lithographers	3 50 to 5 00
Locksmiths	3 00 to 5 00
Porters	1 50 to 2 50
Mathematical instrument makers	3 50 to 6 00
Mechanical draughtsmen	4 50 to 7 00
Millers	2 50 to 5 00
Millwrights	3 50 to 5 00
Marble workers	3 00 to 3 50
Molders	3 00 to 4 50
Map mounters	3 00 to 3 50
Machinists	2 50 to 4 00
Pipe makers and setters	2 50 to 3 50
Pavers and sewer builders	2 00 to 5 00
Planers	2 50 to 3 50
Plate shearers	2 75 to 3 25
Photographers	2 50 to 3 50
Paper hangers	2 50 to 4 00
Pressers	3 00 to 4 00
Piano makers†	3 00
Paper rulers	2 00 to 2 50
Plumbers	3 00 to 4 00
Plasterers	4 00 to 5 00
Printers	3 50 to 4 50
Painters	3 00 to 4 00
Glass sign painters	4 00 to 5 00
Pattern makers	3 00 to 5 00
Rollers	3 00 to 4 00
Rangers	2 50 to 4 00
Roofers	3 00 to 4 00
Steamboat joiners	3 50 to 4 00
Shovel makers	2 75 to 3 25
Stair builders	3 50 to 5 00
Sewing machine hands	1 75 to 2 50
Sheet makers	1 50 to 2 00
Ship carpenters	3 50 to 5 00
Sash and blind cutters	2 25 to 3 50
Sawyers	2 25 to 3 25
Steam fitters	2 50 to 3 50
Saddle makers	2 50 to 4 00
Stocking makers, females	1 25 to 1 75
Spring bed makers	2 25 to 3 50
Stone masons	3 50 to 4 00
Building stone carvers	3 50 to 5 00
Shoemakers, in all branches	2 00 to 4 00
Shoemakers, boys and girls	75 to 1 50
Scale makers	2 50 to 3 50
Safe makers	3 00 to 4 00
Sheet-iron workers	2 50 to 3 50
Tile molders	3 00 to 3 50
Tailors	2 50 to 3 50

* Boys, $1 to $1 25; girls, 50 cents to 75 cents.

† Boys, $1 50.

TABLE V—Continued.

OCCUPATION.	Rate.	OCCUPATION.	Rate.
Trimmers, carriage	$3 00 to 3 50	Wood workers	$3 00 to 4 00
Tanners	2 25 to 3 50	Wagon makers	2 75 to 3 75
Tobacco workers	2 25 to 3 25	Wire cleaners	2 50 to 3 00
Tobacco work'rs, boys and girls	75 to 1 25	Wire drawers	2 25 to 3 50
Tent, awning, and sail makers	2 50 to 4 00	Butchers	2 25 to 3 50
		Wire workers	3 00
Tent, awning, and sail makers, boys and girls	75 to 1 50	Waiters	1 50 to 2 25
Tool makers	3 00 to 4 00	Bartenders	2 50 to 3 50
Tool makers' helpers	1 75 to 2 00	Bookkeepers	3 00 to 6 00
Trunk finishers	2 50 to 4 00	Clerks in wholesale stores	3 00 to 5 00
Tinners	2 50 to 3 00	Calkers	3 00 to 5 00
Tinners, boys	1 00 to 1 25	Rivermen	2 50 to 3 00
Upholsterers	3 00 to 5 00	Salesmen in retail stores	2 50 to 3 50
Varnishers	3 50 to 5 00	Salesmen in wholesale stores	3 50 to 6 00
Whip makers	2 00 to 3 50	Traveling salesmen	3 00 to 4 00
Wood turners	2 50 to 4 00	Miscellaneous workers	2 50 to 5 00
Whiteners	2 50 to 3 00		

TABLE VI.

AVERAGE EARNINGS AND EMPLOYMENT HOURS OF STREET RAILWAY EMPLOYÉS IN SAN FRANCISCO, LOS ANGELES, AND SANTA ROSA.

Market Street Cable Railway Company, San Francisco.

EMPLOYES.	Wages per Day.	Employment Hours.	Wages per Month.	Employment Hours.
Assistant Superintendents and Foremen—				
Four, at			$100 00	13
One, at			75 00	13
One, at			60 00	13
Conductors and collectors—				
Seventy-two, at	$2 50	13		
Eight, at	2 25	13		
Seventeen (boys), at	1 00	13		
Gripmen and motor engineers—				
Sixty-three, at	2 50	13		
Drivers—				
Fourteen, at	2 25	13		
Stables—				
One foreman			85 00	13
One harness maker			90 00	10
One blacksmith			105 00	10
Six blacksmiths			90 00	10
Two blacksmiths			75 00	10
Two blacksmiths			67 50	10
Two blacksmiths			60 00	10
One hostler			60 00	13
Seven hostlers			50 00	13
One harness cleaner			50 00	13
Trackmen—				
One foreman			120 00	10
One paver	3 50	10		
Two laborers	2 50	10		
Six laborers	2 00	10		
Four oilers	2 25	10		
Five oilers	2 00	10		
Three switchmen			75 00	13
Other mechanics—				
Two assistant engineers			100 00	10
Two assistant engineers			90 00	10
One machinist	3 50	10		
One machinist	3 25	10		
One machinist	2 50	10		
Two firemen			70 00	10
Three firemen			65 00	10
One engine wiper	2 00	10		
Three helpers	2 00	10		
One engine cleaner	50	10		
Car house men—				
One grip teacher			75 00	10
One tableman			75 00	13
Six tablemen			60 00	13
One car shifter			60 00	13
One car painter	3 50	10		
One car painter	2 50	10		
Four car cleaners and watchmen			60 00	13
Eight car cleaners			50 00	13
One lamp cleaner and watchman			65 00	13
Two lamp cleaners			60 00	13
Watchmen—				
One special policeman			100 00	13
Three watchmen			60 00	13
Starters and timers—				
Four, at			75 00	13
One, at			42 50	13

Table VI—Continued.

Employes.	Wages per Day.	Employment Hours.	Wages per Month.	Employment Hours.
Carpenters—				
One, at	$3 50	10		
One, at	3 25	10		
One, at	3 00	10		
One, at	2 50	10		
Four, at	2 00	10		
Teamsters—				
One teamster, with horse and car	3 50	10		
One teamster			$50 00	10

Number of hands employed, 388.

Presidio and Ferries Railroad Company, San Francisco.

Employes.	Wages per Week.	Employment Hours (Daily).
Foreman—(1)	$46 70	12
Assistant foreman—(1)	23 35	14
Conductors (men)—(14 "regulars")	14 60	12½
Conductors (boys)—(16 "extras")	10 00	9
Drivers or gripmen—(14 "regulars")	15 50	13
Drivers or gripmen—(14 "extras")	10 00	9
Hostlers—(2)	14 00	14
Blacksmiths—(1)	18 00	10
Track men—(3)	14 70	12
Other mechanics—(8)	15 00	10
Car-house men—(5)	15 75	10
Watchmen—(1)	15 00	13
Starters—(2)	17 50	12½
Boys—(1)	5 75	10

Total number employed, 83 men (*i. e.* 82 men and 1 boy).

North Beach and Mission Railroad Company, San Francisco.

Employes.	Wages per Day.	Employment Hours.
Foreman	$3 00	10
Conductors	2 00	14 to 15
Drivers	2 00	14 to 15
Hostlers	1 66⅔	12
Blacksmiths	2 00 to 3 50	10
Painters	2 00 to 3 25	10
Track men	1 50 to 2 00	10
Other mechanics	2 00 to 3 00	10
Car-house men	1 50	10
Watchmen	2 25	12
Starters	3 00	12
Laborers	1 75 to 2 00	10
Teamsters	2 00	10

Table VI—Continued.

Central Railroad Company, San Francisco.

Employes.	Wages per Day.	Employment Hours (Daily).
Foreman	$2 66	12
Conductors (men)	2 06	14½
Drivers	2 03	14
Hostlers	1 66	12
Blacksmiths	3 00	10
Trackmen	2 00	10
Other mechanics	2 75	10
Watchmen	1 66	12
Starters	2 33	12
Laborers	2 00	10
Teamsters	1 75	10

Total number of hands employed, 98.

Potrero and Bay View Railway, San Francisco.

Employes.	Wages per Day.	Employment Hours.	Wages per Month.	Employment Hours.
Foreman—(1)			$60 00	13
Drivers—(6)	$2 25	13		
Hostlers—(3)			50 00	13
Blacksmiths—(1)			90 00	10
Track men, foreman—(1)			75 00	10
Other mechanics, carpenters—(3)	2 00	10		
Watchmen—(1)			50 00	13

Total number of hands employed, 15.

San Francisco City Railroad Company.

Employes.	Wages per Week.	Employment Hours.
Foreman—(1)	$20 00	84
Drivers—(72)	12 25	68
Hostlers—(20)	11 55	84
Blacksmiths	Contract.	
Track men—(5)	13 85	70
Other mechanics—(4)	16 50	60
Car-house men—(2)	12 60	70
Watchmen—(2)	12 15	84
Starters—(1)	16 00	91
Laborers—(1)	14 00	84
Teamsters—(1)	14 00	84

Total number of hands employed, 161.

TABLE VI—Continued.

Clay Street Hill Railway, San Francisco.

EMPLOYES.	Wages per Week.	Employment Hours.
Foreman—(1)	$20 00	84
Conductors, men—(6)	17 50	98
Conductors, extra—(5)	8 75	35
Grip men—(6)	17 50	98
Grip men, extra—(4)	8 75	35
Carpenter—(1)	20 00	60
Track men—(1)	16 25	70
Other mechanics—(1)	17 50	60
Car-house men—(1)	15 00	70
Watchmen—(1)	12 50	84
Starters—(1)	15 75	84
Engineer—(1)	25 00	----------
Firemen—(2)	14 00	63
Painter—(1)	18 00	60

Total number of hands employed, 32.

Geary Street Railroad, San Francisco.

EMPLOYES.	Wages per Day.	Employment Hours.
Foreman	$2 25	11
Conductors (men)	2 25	13
Drivers (gripmen)	2 25	13
Blacksmiths	2 75	10
Track men	1 75	10
Other mechanics	2 75	10
Car-house men	1 75	10
Watchmen	1 75	12
Starters	2 25	12
Laborers	1 75	10
Teamsters	1 75	10

City Railway of Los Angeles.

EMPLOYES.	Wages per Week.
Foreman	$60 75
Drivers—(5)	12 50
Hostlers—(4)	15 00
Track men—(1)	15 00
Laborers—(2)	15 00

Total number of hands employed, 12.

Main Street Railroad Company, Los Angeles.

EMPLOYES.	Wages per Month.	Employment Hours.
Foreman—(1)	$100 00	----------
Drivers—(6)	50 00	12
Hostlers—(2)	60 00	12
Track men—(1)	50 00	10

Total number of hands employed, 9.

TABLE VI—Continued.

Santa Rosa Railway, Santa Rosa.

Employes.	Wages (Weekly).	Employment Hours.
Drivers—(1)	$11 50	13

Total number of hands employed, 1.

TABLE VII.

Statement of Number of Employes and Rates of Pay of Different Classes, per Month, of the Central Pacific Railroad.

Occupation.	Number.	Rates of Pay.
Agents	225	$50 00 to $225 00
Baggage masters		75 00
Brakemen, flagmen, etc.	740	65 00 to 80 00
Car cleaners	90	60 00
Clerks	4	50 00
Clerks	206	50 00 to 150 00
Clerks	15	60 00
Clerks	4	70 00
Clerks	35	75 00
Clerks	2	80 00
Clerks	9	85 00
Clerks	27	90 00
Clerks	29	90 00 to 200 00
Clerks	2	95 00
Clerks	32	100 00
Clerks	4	105 00
Clerks	6	110 00
Clerks	8	115 00
Clerks	7	120 00
Clerks	18	125 00
Clerks	3	130 00
Clerks	11	135 00
Clerks	10	140 00
Clerks	5	145 00
Clerks	11	150 00
Clerks	2	160 00
Clerks	2	165 00
Clerks	1	170 00
Clerks	4	175 00
Clerks	1	180 00
Clerks	6	200 00
Clerks and draughtsmen	12	75 00 to 200 00
Conductors	221	85 00 to 115 00
Conductors (passenger)		100 00 to 115 00
Conductors (freight)		85 00 to 100 00
Engineers	394	85 00 to 145 00
Engine drivers		100 00 to 130 00
Engine wipers	143	60 00
Employés, other than officers (white)		64 62
Firemen	388	65 00 to 200 00
Foremen	79	105 00 to 200 00
Laborers	1,367	42 00 to 55 00
Laborers	1,437	45 50 to 52 00
Laborers	654	55 00
Laborers, rodmen, etc.	64	35 00 to 90 00
Mechanics	845	52 00 to 84 00
Mechanics	570	60 00 to 85 00
Mechanics, in shops		79 79
Messenger boys	4	20 00 to 35 00

TABLE VII—Continued.

OCCUPATION.	Number.	Rates of Pay.
ls	197	$42 00 to $55 00
ers	18	40 00 to 90 00
pers	60	65 00 to 85 00
ion men (white)		44 62
pyard	17	85 00 to 104 00
tion laborers	740	60 00 to 75 00
amer crews	287	60 00 to 175 00
tchmen	50	55 00 to 60 00
rsons regularly employed by company, including officers	11,890	
erage monthly pay of employés, other than officers (white)		64 62
erage monthly pay of engine drivers		100 00 to 130 00
erage monthly pay of passenger conductors		100 00 to 115 00
verage monthly pay of freight conductors		85 00 to 100 00
verage monthly pay of baggage masters		75 00
verage monthly pay of brakemen, flagmen, switchmen, etc.		65 00 to 80 00
verage monthly pay of section men (white)		44 62
verage monthly pay of mechanics in shops		79 79
verage monthly pay of laborers at stations, etc.		65 00

TABLE VIII.

PERSONS ENGAGED IN EACH SELECTED OCCUPATION, ETC., IN CALIFORNIA.

OCCUPATION.	All Ages.			Age and Sex.						Nativity.						
	Total	Males	Females	10 to 15.		16 to 59.		60 and over.		United States	Ireland	Germany	Great Britain	Sweden and Norway	British America	Other Countries
				Males	Females	Males	Females	Males	Females							
All occupations	384,437	344,344	28,200	3,423	1,042	327,679	26,592	13,042	566	173,382	35,243	27,345	19,913	4,717	11,314	100,630
Agriculture	79,396	78,785	611	1,128	30	72,762	518	4,895	63	78,662	5,220	4,231	3,465	738	2,291	14,789
Agricultural laborers	23,856	23,722	134	1,038	28	22,189	105	500	1	14,597	1,210	890	648	233	621	5,657
Farmers and planters	43,489	43,091	398			32,263	340	3,828	58	29,133	3,249	2,605	2,304	422	1,352	4,424
Gardeners, nurserymen, and vine-growers	4,396	4,371	25	17	2	4,049	21	305	2	875	316	275	216	21	37	2,656
Stockraisers, drovers, and herders	4,967	4,948	19	65		4,694	17	189	2	2,988	233	220	194	28	59	1,245
Professional and personal services	121,435	103,207	18,228	1,252	793	98,833	17,036	3,122	399	50,993	15,041	6,389	4,300	1,301	2,453	40,898
Barbers and hair dressers	1,918	1,767	151	5	1	1,745	149	17	1	750	38	318	47	5	30	730
Boarding and lodging-house keepers	855	373	482			337	460	36	22	320	167	88	75	12	20	173
Clergymen	939	933	6			835	6	98		586	115	42	70	4	20	102
Clerks and copyists (not specified)	1,223	1,170	53	19		1,140	53	11		1,009	29	37	51	4	18	75
Dentists	413	411	2			396	2	15		335	4	12	21	2	17	22
Domestic servants	22,858	12,160	10,698	304	714	11,689	9,819	167	165	5,896	3,630	1,130	644	280	288	10,990
Hotel and restaurant keepers' employés	6,240	5,672	568	43	1	5,486	553	143	14	2,262	754	861	348	99	148	1,768
Journalists	503	490	13			479	13	11		361	22	28	45		15	32
Laborers	57,510	57,158	352	713	43	54,657	294	1,788	15	23,751	8,016	2,413	1,787	755	1,329	19,459
Launderers and laundresses	7,013	5,996	1,017	41	5	5,913	965	42	47	687	378	103	70	17	24	5,734
Lawyers	1,899	1,897	2			1,780	2	117		1,634	69	36	77	3	34	46
Livery stable keepers and hostlers	1,932	1,932		9		1,889		34		1,134	442	85	90	11	77	93
Musicians and teachers of music	1,497	845	652	3	5	816	640	26	7	859	36	275	90	9	21	207
Officials and employés (civil) of government	3,789	3,624	165	2	1	3,662	161	160	3	2,811	387	159	174	24	83	151
Physicians and surgeons	1,851	1,786	65			1,583	59	203	6	1,188	61	112	98	6	65	321
Teachers	4,788	1,691	3,097	1	2	1,633	64	57	31	3,970	158	124	154	5	132	245
Trade and transportation	57,392	56,621	771	429	27	54,843	714	1,349	30	27,667	6,009	7,473	3,400	1,143	1,498	10,202
Clerks, salesmen, and accountants in stores	11,835	11,553	282	237	19	11,197	262	119	1	7,903	611	1,195	637	62	286	1,141
Commercial travelers, hucksters, and peddlers	2,974	2,931	43	6	2	2,863	36	62	5	613	192	286	104	10	37	1,732
In banking and brokerage of money and stocks	1,431	1,423	8	3		1,366	7	54	1	956	88	154	105	2	29	97
In insurance	568	562	6	3		539	6	20		389	37	58	44	2	5	33
Saloon keepers and bartenders	4,063	4,015	48	6		3,899	47	110	1	1,524	576	1,023	228	60	126	526
Traders and dealers	14,920	14,656	264			14,145	249	511	15	5,881	1,272	3,092	824	83	306	3,462
Draymen, hackmen, teamsters, etc.	6,007	6,007		19		5,854		134		3,715	893	383	287	51	267	411
Officials and employés of express companies	647	646	1	3		631	1	12		340	140	61	40	12	20	34
Officials and employés of railroad companies	11,890															
Officials and employés of street railroad companies	615	615				607		8	1	304	211	27	28	5	22	18

Officials and employés of telegraph companies	577	550	27	67		482	27	1		501	11	5	16	1	32	11
Sailors, steamboatmen, stewardesses, canalmen, pilots, and watermen	5,523	5,523		9		5,436		78		1,553	655	705	601	763	137	1,109
Manufacturing, mechanical, and mining industries	118,282	109,690	8,592	621	193	105,363	8,324	3,706		48,084	9,669	9,337	8,869	1,561	5,199	35,563
Apprentices to trades	1,107	875	142	121	35	754	107			906	19	16	24	6	14	32
Bakers	1,368	1,275	93	3		1,227	90	45	3	290	145	553	85	20	30	245
Blacksmiths	4,689	4,689		11		4,538		140		2,631	593	349	407	56	381	272
Bookbinders and finishers	225	162	63	9	6	149	57	4		162	17	23	7	1	4	11
Boot and shoemakers	4,577	4,411	166	21	5	4,225	160	165	1	894	587	540	195	41	127	2,193
Brewers and malsters	749	741	1	3		734	1	11		124	50	459	27	2	16	71
Brick and stonemasons, marble and stonecutters	1,565	1,565		6		1,465		94		732	368	103	186	12	39	125
Brick and tile makers	709	708	1			70	1	7		83	51	25	10	14	188	338
Butchers	3,301	3,301		20		3,224		57		1,612	207	774	158	22	67	461
Cabinetmakers and upholsterers	1,378	1,307	8	5		1,307	8	58		573	73	410	70	43	43	166
Carpenters and joiners	9,056	9,056		11		8,520		525		5,448	728	644	765	149	654	628
Carriage, car, and wagonmakers	844	844		3		809		32		464	68	88	54	21	109	40
Cigar makers and tobacco workers	3,217	3,163	54	49	9	3,104	45	10		255	11	157	26	3	8	2,757
Clerks and bookkeepers in manufac'g establishm'ts	281	277	4	1		274	4	2		227	7	14	13	2	6	12
Coopers	553	553		4		523		26		224	87	128	18	17	17	62
Cotton, woolen, and silk-mill operatives	776	622	154	25	7	590	144	7	3	343	96	19	67	4	12	235
Employés in manufac'g establishm'ts (not specified)	627	570	57	11	2	552	55	7		315	49	56	32	9	21	145
Engineers and firemen	2,874	2,874				2,814		60		1,763	351	138	373	34	81	134
Fishermen and oystermen	3,010	3,008	2	6		2,974	2	28		246	60	58	33	37	998	1,578
Gold and silver workers and jewelers	550	548	2	1		536	2	11		254	9	108	40	11	5	123
Harness, saddle, and trunk makers	1,138	1,109	29	11		1,066	29	32		684	106	119	63	7	50	109
Iron and steel workers	1,099	1,099		5		1,082		12		535	235	54	155	24	30	66
Leather curriers, dressers, finishers, and tanners	712	712		7		697		8		200	142	148	30	8	37	147
Lumbermen, raftsmen, and woodchoppers	4,433	4,433		6		4,347		80		1,795	215	108	174	180	555	1,406
Machinists	1,824	1,824		5		1,764		55		1,118	121	153	238	26	63	105
Manufacturers and officials of manufac'g companies	1,203	1,192	11			1,148	11	44		658	55	185	81	1	36	187
Mill and factory operatives (not specified)	675	588	87	21	8	565	77	2	2	38	48	33	21	15	27	151
Millers	547	547		3		510		34		349	21	61	47	12	29	28
Miners	37,147	37,141	6	73		35,388	6	1,680		9,281	2,513	1,431	3,770	369	692	19,091
Painters and varnishers	3,323	3,314	9	8	1	3,239	7	67	1	2,048	321	271	293	53	100	237
Paper-mill operatives	160	153	7	5		146	7	2		66	8	3	8	1	7	67
Plumbers and gasfitters	841	841		9		830		2		566	115	29	76	1	25	29
Printers	2,232	2,130	102	33	2	2,079	100	18		1,820	84	62	100	6	45	115
Sawmill operatives	1,281	1,281		16		1,253		12		644	57	42	63	48	101	326
Ship carpenters, calkers, riggers, and smiths	719	719				691		28		354	111	39	93	20	59	43
Tailors, dressmakers, and milliners	9,516	2,544	6,972	10	100	2,421	6,821	113	51	5,094	886	898	404	136	218	1,880
Tinners	1,141	1,132	9	10		1,098	9	24		723	60	126	70	13	28	121
Wheelwrights	317	317		1		302		14		208	21	23	16	7	23	19

CHAPTER XV.

LABOR SAVING MACHINERY.

Of the extent of the vast increase in the producing power of machinery in all branches of industry, it is almost impossible to determine, either by comparison or statistics. It is to be regretted that full details cannot be obtained at this writing of the effect of machinery on the productions of the country. There are but few occupations in this country in which machinery is not employed. The displacement of hand labor by machinery is felt in all the great industries of the country. Machinery in California causes increased production in all or nearly all of the industries of the State. The work done by machinery in this State in the year 1884 equals at least ten times the work of hand labor.

As early as the year 1845 manufacturing was carried on by the aid of machinery in Massachusetts. As an evidence of the increased power of production through machinery, the following table is taken from the Massachusetts census of 1875:

MANUFACTURES.	1845.	1855.	1865.	1875.
Boots and shoes:				
Number of establishments	------------	------------	206	1,461
Capital invested	------------	------------	$10,322,599	$18,692,864
Value of stock used	------------	------------	36,418,845	54,976,504
Persons employed	45,877	77,827	52,821	48,090
Value of goods made	$14,799,140	$37,501,725	$56,113,987	$89,375,792
Pairs of boots and shoes made	20,896,312	45,066,828	31,870,581	59,762,866
Cotton goods:				
Number of establishments	302	294	237	220
Number of spindles	817,483	1,519,527	1,913,756	3,859,237
Capital invested	$17,739,000	$31,961,000	$33,822,086	$63,844,708
Value of stock used	------------	------------	50,393,831	41,059,893
Persons employed	20,710	34,787	24,151	60,176
Value of goods made	$12,193,449	$26,140,537	$55,508,447	$77,934,753
Yards of cloth made	178,401,614	318,224,188	175,875,934	874,780,874
Woolen goods:				
Number of establishments	178	146	231	183
Number of sets machinery	514	695	1,157	1,383
Capital invested	$5,604,002	$7,305,500	$14,714,672	$17,209,980
Value of stock used	------------	------------	35,377,996	23,607,561
Persons employed	7,372	10,090	18,753	19,036
Value of goods made	$8,877,478	$12,105,512	$48,879,828	$39,566,378
Yards of cloth made	23,877,819	26,168,130	46,008,141	90,208,280

By reference to the foregoing tables, these facts are the most salient: In 1845, it will be seen by a simple sum in division, that the annual average production in boots and shoes for employés was 455 pairs; while in 1875, it was 1,242 pairs, showing the wonderful producing power of machinery, for, while in 1875, the number of men employed was less than 3,000 more than those employed in 1845, yet the production was three times as much.

In the manufacture of cotton goods, the first noticeable thing in the table is the steady decrease in the number of establishments. In 1845, the number of employés to each establishment averaged 68 persons. Ten years later, 118 persons; and in 1875, 273 persons. The average number of yards of cloth per employés made in 1845, was 8,614, in 1875, was 14,537 yards.

In the manufacture of woolen goods, the increased production per employé, was as follows: In 1845, the number of yards of cloth made per employé, was 1,882, and in 1875, was 4,738 yards.

THE GENERAL APPLICATION OF THE FACTORY SYSTEM.

In nearly all industries where the terms of the definition of a factory can apply, that is, where raw material can be converted into finished goods by consecutive harmonious processes, carried along by a central power, the factory system has been adopted. In all textile manufactures this has been the case, and the adoption of the new system in the woolen, silk, worsted, flax, and all textile trades, followed immediately upon, or was contemporaneous with, the adoption of the system in the cotton trade. Outside of the textile trades the extension of the system has been rapid indeed, until the statistics of industries of Great Britain and of the United States are simply the statistics of manufactures under the factory system. This statement is, in the main, true of Belgium, France, and Germany, although in France a very large proportion of weaving, especially of fine goods and silks, is still done by hand. In the silk industry in France, however, the power-loom is now rapidly displacing the hand-loom. Notwithstanding this general adoption of the system by the textile trades in the great manufacturing states of Europe and America, more than one half the population of the globe is clothed with hand-made goods.

While the inauguration of the factory system in the United States was some fifteen years later than its birth in England, the extension of the system has been more rapid and its applications more varied here than in any other country. As parties engaged in industries other than the manufacture of textiles saw the wonderful results of systemized labor, by its division under the scientific methods of the factory system, they gradually adopted the new order, until now it is quite safe to say that of the nearly three millions of people employed in the mechanical industries of this country at least four fifths are working under the factory system. Some of the other remarkable instances of the application of the system are to be found in the manufacture of boots and shoes, of watches, musical instruments, clothing, agricultural implements, metallic goods generally, firearms, carriages and wagons, wooden goods, rubber goods, and even in the slaughtering of hogs. Most of these industries have been brought under the factory system during the past thirty years.

It is but a comparatively few years since the manufacture of boots and shoes was carried on in the little home shops which were attached to or built near the dwelling of the shoemakers. These little shops in which a few men, rarely more than four, worked, upon the bench, upon stock received from the manufacturer, cut out and ready to be put together, are closed, and the great shoe factory takes their place.

In the shoe factory is to be seen the perfect adaptation of the manufacture of goods by successive, harmonious processes. The shoe factory is rapidly doing away with the clogs of England and the sabots of the continent. The watch factory presents, perhaps, the most complete scientific application of the factory system. It certainly has brought the watch within the means of the poor man. Pianos, house organs, tapestry, carpets, and many other luxuries which the rich only could afford, are now enjoyed by the masses, simply as the result of the factory system of industry.

The history of the achievements of the modern system would require volumes devoted to that particular subject. The instances referred to indicate the vast extent of the application of the system. If they do not, the fact that the product of the industries of the United States has reached $7,000,000,000 per annum will illustrate the extent of its growth.

Many goods are made under a mixed system of manufacture, but the tendency is to bring all under the factory system as rapidly as possible. This tendency is accelerated by the small expense and the comparative ease with which inventions are secured and protected in this country; and this may account, in some degree, for the more general adoption of the system here than in other countries. It is quite impossible to arrive at an accurate statement as to the number of persons it would require under the old individual system to produce the goods made by the present factory workers of this country, but by careful computations in some branches of work a rough estimate of the whole would indicate that each factory system employé in 1883 represents, on an average, at least fifty employés under the individual system. Thus it would require about one hundred and fifty million persons working under the old system to produce the goods made by the three million or so factory workers of to-day. This computation may be very wide of the truth, but any other is equally startling. This estimate will hardly be disputed when it is considered that in spinning alone eleven hundred threads are spun now at one time, where one was spun under the old system.—[*Census Report.*

CHAPTER XVI.

RECOMMENDATIONS.

One of the greatest changes in the principles of law, which the factory system has wrought, is in relation to the liability of employers for injuries received by their workmen. The question as to how far employers shall be held liable for damages to their employés, for accidents occurring through the negligence of co-employés, is creating a good deal of discussion in England, and has, in a limited degree, already commanded attention in this country.

The employer is now liable for two classes of injuries caused by fellow-workmen: when he has directly interfered in the act which caused the injury, and when, by his negligence in selecting, he has employed an incompetent workman. In all other cases, except where special legislative restriction exists, he is not liable for injuries to co-workmen, unless by special contract he assumes to become liable; but the employer never, or rarely, suggests such contract; this must come from the workman.

The necessity exists for legislative action, making the employer also liable for all injuries caused by his authorized agents in the legitimate performance of the duties which he has prescribed, such regulation to apply to industrial works and railroads.

Legislatures in America and elsewhere have felt the influence brought to bear in favor of some law upon the subject. In the year 1880, in England, a law was passed, known as the Employers' Liability Act, which provides a remedy and compensation for personal injury caused to workmen. In the State of Iowa the law provides that "Every railroad company shall be liable for all damages sustained by any person, including employés of the company, in consequence of any neglect of its agents, or by any mismanagement of its engineers or employés of the company."

The following agreement was furnished this office by an aged and infirm parent whose sons were in the employ of the firm named in this agreement. The sons were requested to sign this agreement, as a condition to their employment, and the father to sign the same, thereby acknowledging himself bound by all the terms thereof:

For and in consideration of my employment by the firm of —— —— in and about their business at Nos. 215, 217, and 219 Bush Street, San Francisco, I do, for myself, my heirs, executors, and administrators, hereby release, forgive, and waive any and all claims against said firm for damages or injuries sustained or suffered by me, or which I may sustain or suffer while in said employment, by reason of the acts of my employers or either of them, or of any of my co-employés in and about said business, or resulting from the use of any of the presses, elevators, machinery, or appliances used in and about said business, or which may be put, or used, in or about the same during my employment by said firm, regardless of the question whether such damage or injury result from carelessness or otherwise.

Dated San Francisco, ————, 188—.

—— ——.

Witness: —— ——.

In consideration of the employment by the firm of —— ——'of my ———, who has signed the agreement on the other side of this paper, —— being a minor, I, ——— ——— of said minor, do hereby consent to and ratify said employment and agreement, and hereby acknowledge myself bound by all the terms and conditions thereof.

——— ———

Dated San Francisco, ———, 188—.
Witness, ——— ———.

Whether a firm or individual employer has any legal right to enforce such an agreement is a question into which I do not propose at present to enter. I cannot, however, refrain from entering a strong objection to the use of any such conditional document, and in order to bring the issue squarely before your honorable body, I have prepared the following draft of an Act, which I commend to your attention:

Be it enacted:

That when personal injury is caused to a workman by reason of any defect in the ways, works, machinery, or plant connected or used in the business of the employer; or by reason of the negligence of any person in the service of the employer who has any superintendence intrusted to him, while in the exercise of such superintendence; or by reason of the negligence of any person in the service of the employer to whose orders or directions the workman at the time of the injury was bound to conform, and did conform, when such injury resulted from his having so conformed; or by reason of the act or omission of any person in the service of the employer done or made in obedience to the rules or by-laws of the employer, or in obedience to particular instructions given by any person delegated with the authority of the employer in that behalf; or by reason of the negligence of any person in the service of the employer, or who has charge or control of any signal points, locomotive engine, or train upon a railway; in all these cases the workman shall have the same right of compensation and remedies against the employer as if he had not been a workman of or in the service of the employer.

MECHANICS' LIEN.

I have further to call your attention to the following draft of an Act on the important subject of the mechanics' lien, which I also recommend:

Section 1. That every person who shall have performed any labor in the service of any person or corporation, who shall hereafter assign property in trust for the benefit of creditors, shall be entitled to receive, out of the trust fund when the same is insufficient to pay all debts of the assignor, the full amount of the wages due to such person for such labor; *provided*, that such labor shall have been performed within twelve months immediately preceding the assignment.

Sec. 2. This Act shall take effect from and after its passage.

COÖPERATIVE UNIONS.

Lastly, I have prepared the following draft of an Act, referring to coöperative trades unions, which I also present, with a recommendation that it be passed:

Section 1. That any number of persons, not less than five, may associate themselves together for the purpose of mutual protection and relief of its members, and for the payment of stipulated sums of money to the families or heirs of the deceased members of such association.

Sec. 2. That the trustees and officers thereof shall be chosen in such manner and for such time as may be provided in the rules and regulations of such association; and when chosen, said trustees shall, under their hands and seals, make a certificate, which shall specify as follows:

First—The name of such association, and by which it shall be known.
Second—The name of the place where its principal office is or shall be located.
Third—The manner of carrying on the business of said association.

Sec. 3. That when organized, as provided in Section 2, the persons named as corporators in said certificate are hereby authorized to carry into effect the objects named in said certificate, in accordance with the provisions of this Act; and their associates and assigns, by the name provided in said certificate, shall thereafter be deemed a body corporate, with succession, and shall have power to receive money either by voluntary donation or contribution, or to collect the same by assessment on its members, and to distribute, invest, and appropriate the same in such manner as such association may deem proper, with power to sue and be sued, plead and be impleaded, defend and be defended, contract and be contracted with, acquire and convey at pleasure all such real and personal estate as may be necessary and convenient to carry into effect the objects of the association; to make and to use a common seal, and the same to alter at pleasure; and do all needful acts to carry into effect the objects for which it was created, in such manner and for such purpose as may be prescribed by the rules and regulations of the association, not inconsistent with the laws of the State and the purposes of the association as above expressed.

SEC. 4. This Act to take effect from and after its passage.

ACKNOWLEDGMENTS.

The Bureau of Labor Statistics takes this method of expressing its special obligations to its ex-deputy, H. J. Mohan, and to Jesse A. Galland, deputy in this office; to Thos. J. Vivian, for valuable and intelligent assistance; to S. S. Bamberger, for aid in the preparation of circulars; and to the various labor organizations, for their suggestions, advice, and encouragement.

FINANCIAL STATEMENT.

By the law creating this bureau, approved March 3, 1883, the following appropriations were made for the first two years:

For office rent	$50 per month
Office furniture	$500
Salary of Commissioner	$2,400 per annum
Salary of Deputy Commissioner	1,500 per annum
Stationery and other contingent expenses	500 per annum

STATEMENT OF EXPENDITURES FROM MARCH, 1883, TO JANUARY 1, 1885.

Salary of Commissioner from Opening of Bureau, 1883, *to Close of* 1884.

1883.		1884.	
March	$160 00	February 29	$200 00
April 30	200 00	March 31	200 00
May 31	200 00	April 30	200 00
June 30	200 00	May 31	200 00
July 31	200 00	June 30	200 00
August 31	200 00	July 31	200 00
September 29	200 00	August 31	200 00
October 31	200 00	September 30	200 00
November 30	200 00	October 31	200 00
December 31	200 00	November 30	200 00
1884.		December 31	200 00
January 31	200 00	Twenty-one months	$4,360 00

Salary of Deputy Commissioner from Opening of Bureau, 1883, *to Close of* 1884.

1883.		1884.	
March —	$95 80	February 29	$125 00
April 30	125 00	March 31	125 00
May 31	125 00	April 30	125 00
June 30	125 00	May 31	125 00
July 31	125 00	June 30	125 00
August 31	125 00	July 31	125 00
September 29	125 00	August 30	125 00
October 31	125 00	September 30	125 00
November 30	125 00	October 31	125 00
December 31	125 00	November 30	125 00
1884.		December 31	125 00
January 31	125 00	Total	$2,720 80

Statement of Office Furniture Account.

Appropriation		$500 00
June 1, 1883	$422 80	
January 19, 1884	77 00	
		499 80
Balance		$0 20

(Vouchers for the above on file.)

FINANCIAL STATEMENT—Continued.

Office Rent Statement.

1883.		1884.	
April	$50 00	March	$50 00
May	50 00	April	50 00
June	50 00	May	50 00
July	50 00	June	50 00
August	50 00	July	50 00
September	50 00	August	50 00
October	50 00	September	50 00
November	50 00	October	50 00
December	50 00	November	50 00
1884.		December	50 00
January	50 00	Twenty-one months	$1,050 00
February	50 00		

(Vouchers for the above on file.)

Stationery and Contingent Expenses.

1883.		1884.	
June 1	$17 95	February 6	$21 05
August 6	156 40	March 24	58 35
August 6	45 60	May 21	106 55
September 7	73 85	May 27	50 00
October 18	48 75	July 21	55 50
November 16	60 00	October 19	179 48
December 7	76 40		
		Total	$949 88

(Vouchers for the above on file.)

APPENDIX.

CHAPTER I.

THE MANUFACTURING INDUSTRY.

RELATION OF WAGES AND MATERIALS TO PRODUCTS.

It is evident, that in any comparison of State with State or of city with city, as regards their respective manufacturing importance, or of industry with industry, as regards their respective contributions to the wealth of the country, the value of the materials consumed should be deducted from the reported aggregate value of the products before such comparisons are made.

The neglect of this simple and natural rule has led to grave misunderstanding of the proper effect of the census statistics of manufactures, and to many bitter complaints on the part of cities and of States deeming themselves injured.*

It is also evident, that in estimating the contributions made by the manufacturing industries, as a whole, to the annual revenue of the country, a similar deduction should be made. Thus, while the aggregate value of the manufactures of the United States is reported in 1880 at $5,369,571,191, and in 1884 at $7,500,000,000, the value of the materials consumed therein is given at not less than $3,396,823,549.

It is the difference between these two sums—$1,972,755,642—which measures the net product of our manufacturing industries. This deduction would require to be made were all the materials of manufacture drawn, in every case, directly from agriculture; but, as a matter of fact, the products of one industry often become the materials of another, and the products of this, perhaps, in turn the materials of a third industry; and so the values of manufactured products are swollen by the repeated inclusion of the same original subject-matter. Thus, certain amounts of coal, iron ore, limestone, and labor—not to speak of other elements—enter to make up the value of a certain quantity of pig iron. All the latter may, a few months later, become the material for the manufacture of a certain quantity of bar-iron, the reported value of which, of course, includes the value of the pig-iron, as well as of the labor and other elements in its own production. In this way the value of the coal, iron ore, and limestone, reappear again and again, through successive processes of manufacture.

And this is statistically right. Only in this way can the facts of each industry by turns be exhibited. To omit these elements at any stage of production would be to misstate the facts of the particular industry concerned. But it is evident that this statistical condition renders it imperative not to consider the aggregated values of all products of manufacture as an addition to the wealth of the country; but, on the contrary, in all comparisons of the nature referred to the value of materials should uniformly be deducted.

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* See letter of the late Superintendent of Census, with reference to the manufacturing statistics of Philadelphia.

The relation of materials to product, in the statistics of industry, needs to be carefully borne in mind; otherwise the most mistaken views of the importance of the several branches of industry will result.

The manufacturing and mechanical industries may be grouped in respect of the value of materials into four classes:

First—Those industries in which the subject-matter is of a distinct and immediate commercial value, but the property does not reside in the person who treats it. In these cases, still, the value of the subject-matter treated is not embraced in the return of materials. A familiar illustration is that of horseshoeing. It would be height of absurdity for the smith, for example, to return the value of unshod horses among his "materials," and the value of the same, when shod, in his product. The census assigns as the materials of his industry merely the coal, iron, steel, etc., used, and, as the value of his product, merely the price of the personal service he renders, plus the cost of those materials In the same category are many of the trades. The returns in respect to the industries of painting, plastering, and plumbing, for example, do not take into account the value of the houses, stores, factories, etc., before and after these operations, but regard only the added value given as the product, and in the same way only the paints, the plaster and lime, the tubing, iron and brassware, etc., used as the "materials" of these industries.

Second—Those industries in which the entire value of the subject-matter is carried into the value of "materials," and appears again in the product, enhanced by the value of labor, by the charges for the use of capital, for rent, freight, etc., but in which the value of such subject-matter is small compared to the cost of labor. The cabinet-maker takes a few dollars' worth of woods, coarse or fine, and works up this material into articles bearing ten times the value. The cutler takes a few pounds of steel, and produces edged or pointed instruments of high cost, because of the time and skill required in their fabrication. In all these cases the value of the product is not greatly enhanced by the fact that the entire subject-matter of the industry is included.

Third—Industries which are otherwise under the same conditions as those of the second class, but in which the value of the materials approaches, or even moderately exceeds, the value of the labor employed, and becomes thus an important element in the final value of the product as reported, enhancing the apparent production of the industry in a high degree. Here comes in the great body of the industries known technically as the "manufacturers" of the country, the mill and factory industries, whose productions appear oftentimes enormous as compared with those of bodies of craftsmen more skilled and receiving higher wages, and do so merely because of the high cost of the materials consumed in the former case.

Fourth—Industries in which the value of the materials far exceeds all the other elements in the cost of production combined, and thus carries up the apparent product of these industries to a very high point, although, in fact, comparatively little value has been added by these operations, and only a small number of artisans or laborers supported.

The reduction of gold and silver, calico printing, bleaching and dyeing, the currying of leather, the packing of meat, the refining of sugar and molasses, and the production of flour and meal, are among the most important industries of this class.

The distribution of the industries embraced in Table I, as nearly as possible, according to the classification just indicated, yields the following instructive results:

TABLE I.

Relation of Wages and Materials to Products in Manufacturing and Mechanical Industries.

1880–1883.

Class.	Number of Hands Employed.	Amount Paid in Wages.	Value of Materials.	Value of Products.
I	123,787	$46,972,802	$64,875,494	$164,523,518
II	240,365	91,618,876	86,007,672	252,180,128
III	2,254,204	768,628,877	2,227,225,636	3,796,006,063
IV	114,239	40,733,240	1,018,714,747	1,156,869,482
Totals	2,732,595	$947,953,795	$3,396,823,549	$5,369,579,191
1883—Totals	2,975,000	$1,147,000,000	----------------	$7,500,000,000

Class.	Excess of Products over Materials.	Excess of Products over Wages and Materials.	Wages in $100 of Products.	Materials in $100 of Products.	Wages and Materials in $100 of Products.	Product per Capita, gross.	Product per Capita, gross, Deducting Materials.
I	$99,648,024	$52,675,222	$28 55	$39 43	$67 98	$1,329 08	$804 99
II	166,172,456	74,553,580	36 33	34 10	70 43	1,049 15	691 33
III	1,568,780,427	800,151,550	20 25	58 67	78 92	1,683 96	695 93
IV	138,154,735	97,421,495	3 52	88 05	91 57	10,126 74	1,209 34
Totals	$1,972,755,642	$1,024,801,847	$17 65	$63 26	$80 91	$1,965 01	$721 93

TABLE I—Continued.

1870.

Class.	Number of Hands Employed.	Amount Paid in Wages.	Value of Materials.	Value of Products.
I	110,504	$35,689,883	$67,850,482	$154,692,177
II	380,112	160,543,329	172,617,561	503,281,690
III	1,420,345	535,293,694	1,483,951,729	2,636,790,545
IV	98,778	30,769,841	692,676,576	822,792,139
Totals	2,009,739	$762,296,747	$2,417,096,348	$4,117,556,551

Class.	Excess of Products over Materials.	Excess of Products over Wages and Materials.	Wages in $100 of Products.	Materials in $100 of Products.	Wages and Materials in $100 of Products.	Product per Capita, gross.	Product per Capita, gross, Deducting Materials.
I	$86,841,695	$51,151,812	$23 07	$43 86	$66 93	$1,400 00	$785 87
II	330,664,129	170,120,800	31 89	34 30	66 19	1,324 03	869 91
III	1,152,838,816	617,545,122	20 30	56 28	76 58	1,856 44	811 66
IV	130,115,563	99,345,722	3 74	84 18	87 92	8,329 71	1,317 25
Totals	$1,700,460,203	$938,163,456	$18 51	$58 70	$77 21	$2,048 80	$846 11

The calculations which have been added to show the number of dollars' worth of wages, and of materials, separately and combined, in each hundred dollars of product, and also the average value of production, gross and net, to each hand employed, are well worth studying.

It appears that the value of the materials consumed in the several groups of industries range from $34 10 to $88 05 in each $100 of product; that the amount of wages ranges (going so to speak, in the opposite direction) from $36 33 to $3 52 in each $100 of product, while the gross product per capita ranges from $1,049 15 to $10,126 74, and the net product ranges from $691 33 to $1,209 34. The reasons for these astonishing differences is not found chiefly in any difference in the quality of labor, or in the more extensive application of machinery in one class than in another, but almost wholly in the treatment of this subject of the materials consumed in the successive industries, and classes of industries.

THE PERIOD COVERED BY THE RETURNS.

It needs to be borne carefully in mind, in the use of the above tables, that the period covered by the returns is the twelve months from June 1, 1879, to May 31, 1880, inclusive. The fluctuations of productive industry are so incessant, and so extensive, that it is necessary to fix precisely the period covered by any statement before tests can be supplied to ascertain its completeness and accuracy. Especially in the United States, where these fluctuations are far greater than in older manufacturing countries, it is essential to observe this caution.

It often happens that the comparison of two twelve months periods, having so many as ten or eleven months in common, will exhibit important differences caused by the eleventh or twelfth month, or both.

This caution is of especial importance in connection with the tenth census, inasmuch as the first portion of the census year was embraced within the long period of industrial inactivity which had succeeded the panic of 1873, while the latter months of the year witnessed an almost fierce resumption of manufacturing industry.

INCREASE OF MANUFACTURING INDUSTRY, 1850–1883.

The growth of the United States in manufacturing is one of the most noteworthy features of the present industrial age. It is not easy to say which is the best test of that growth; but the application of any one of the several tests offered by the tables common * to the last four censuses, shows our national progress in this direction to have been remarkable.

YEARS.	Gross Value of Products.	Gain per Cent in 10 Years.	Gain per Cent in 20 Years.	Gain per Cent in 33 Years.
1850	†$1,019,109,616			
1860	1,885,861,676	85.05		
1870	4,232,325,442	124.42	315.30	
1883	8,500,000,000			

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* With certain exceptions which are not of sufficient importance to require to be noted for the purposes of the following discussion.

† This is the true total. The total published is $1,019,106,616.

It is noted in another place, that in comparisons of 1870 with 1880, on the one hand, or with 1860 on the other, it should be borne in mind that the figures for 1870 are stated in a currency which was at a great discount in gold, the average premium on gold being for the twelve months, June 1, 1869, to May 31, 1870, 25.3 per cent, which is closely equivalent to a discount on currency of 20 per cent. If, then, we discount the reported values of 1870 by one fifth, we shall have as our corrected table, the following:

YEAR.	Corrected Gross Value of Manufactured Products.	Corrected Gain per Cent in 10 Years.	Corrected Gain per Cent in 20 Years.	Corrected Gain per Cent in 33 Years.
1850	$1,019,109,616			
1860	1,885,861,676	85.05		
1870	3,385,860,354	79.54	232.24	
1883	8,500,000,000			

Again, we may inquire what has been the increase in the net value of manufactured products reported in the four successive censuses taken for the purposes of this comparison; that is, the value of the products after deduction of the value of the materials consumed:

YEAR.	Net Value of Products Manufactured.	Gain per Cent in 10 Years.	Gain per Cent in 20 Years.	Gain per Cent in 33 Years.
1850	*$463,935,296			
1860	854,256,584	84.13		
1870	1,743,898,200	104.14	275.89	
1883	2,220,000			

* The true total of materials is $555,174,320. The one published is $555,123,822.

Discounting the figures for 1870 on account of the premiums on gold, as we did with the figures reporting gross product, we should have the corrected table of the net values of manufactured products, as follows:

YEAR.	Corrected Net Value of Manufactured Products.	Corrected Gain per Cent in 10 Years.	Corrected Gain per Cent in 20 Years.	Corrected Gain per Cent in 33 Years.
1850	$463,935,296			
1860	854,256,584	84.13		
1870	1,395,118,560	63.31	200.71	
1883	2,220,000			

Again, we may take the figures of capital reported as invested in manufacturing industries at the successive periods under consideration, as affording a certain measure of the growth of the country in industrial power, although there is too much reason to believe that the returns of capital have always been gravely defective, for reasons which will be adverted to hereafter. Assuming, however, that the liability to omission or defective statement remained of constant force from 1850 to 1880, we should have the following progressive results:

YEAR.	Capital Invested in Manufactures.	Gain per Cent in 10 Years.	Gain per Cent in 20 Years.	Gain per Cent in 33 Years.
1850	$533,245,351			
1860	1,009,855,715	89.38		
1870	2,118,208,769	109.75	297.23	
1883	3,100,000,000			

Discounting the reported values of 1870, as has been done in preceding cases, we should have the corrected table as follows:

YEAR.	Corrected Amount of Capital Invested in Manufactures.	Corrected Gain per Cent in 10 Years.	Corrected Gain per Cent in 20 Years.	Corrected Gain per Cent in 33 Years.
1850	$533,245,351			
1860	1,009,855,715	89.38		
1870	1,694,567,015	67.80	217.70	
1883	3,100,000,000			

Again, we may take for comparison the amount of manufacturing wages paid in each of the years 1850, 1860, 1870, and 1883:

YEAR.	Amount of Manufacturing Wages Paid.	Gain per Cent in 10 Years.	Gain per Cent in 20 Years.	Gain per Cent in 33 Years.
1850	*$236,759,464			
1860	378,878,966	60.03		
1870	775,584,343	104.71	227.58	
1883	1,147,000,000			

* This is the true total. The one published is $236,755,464.

Should we discount the amount of wages paid in 1870 for the same reason and to the same extent as was done in the case of the gross product and the net product of that year, we should have the corrected table as follows:

YEAR.	Corrected Amount of Manufacturing Wages Paid.	Corrected Gain per Cent in 10 Years.	Corrected Gain per Cent in 20 Years.	Corrected Gain per Cent in 33 Years.
1850	$236,759,464			
1860	378,878,966	60.03		
1870	620,467,474	63.76	162.06	
1883	1,147,000,000			

If, again, we were to take the number of hands employed as the test of the manufacturing power of the country on the several dates named, we should have the following table:

YEAR.	Number of Hands Employed.	Gain per Cent in 10 Years.	Gain per Cent in 20 Years.	Gain per Cent in 33 Years.
1850	*958,079			
1860	1,311,246	36.86		
1870	2,053,996	56.64	114.39	
1883	2,975,000			

* This is the true total. The one published is 957,059.

In the above table we read an element which requires no allowance to be made on account of the state of the currency in 1870. The tremendous leap made by our manufacturing industries between 1860 and 1870, under the stimulus of war demand and war prices, forms a very striking feature of this table. Let us now put some of these separate elements together into a table for prompt and easy comparison:

	Gross Value of Manufactured Product.	Gross Value of Manufactured Product in 1870, Discounted by Premium on Gold.	Net Value of Manufactured Product.	Net Value of Manufactured Product in 1870, Discounted by Premium on Gold.
Per cent gain, 10 years, 1850–60*	85.05	85.05	84.13	84.13
Per cent gain, 10 years, 1860–70	124.42	79.54	104.14	63.31
Per cent gain, 10 years, 1870–80	26.87	58.59	13.12	41.40
Per cent gain, 20 years, 1860–80	184.73	184.73	130.93	130.93

	Capital Invested.	Capital Invested in 1870, Discounted by Premium on Gold.	Wages Paid.	Wages Paid in 1870, Discounted by Premium on Gold.	Hands Employed.
Per cent gain, 10 years, 1850–60*	89.38	89.38	60.03	60.03	36.86
Per cent gain, 10 years, 1860–70	109.75	67.80	104.71	63.76	56.64
Per cent gain, 10 years, 1870–80	31.73	64.66	22.22	52.78	33.04
Per cent gain, 20 years, 1860–80	176.30	176.30	150.20	150.20	108.40

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* The true total of 1850 is used in casting these percentages.

THE GEOGRAPHICAL DISTRIBUTION OF OUR MANUFACTURING INDUSTRIES.

The geographical distribution of manufactures throughout the United States appears by the following tables, as was to be expected, to be governed by very different forces from those which control the distribution of population or of agricultural industry. The following table exhibits the rank of each State in the several respects of population, number of farms, aggregate value of farms, aggregate value of farm products, number of manufacturing establishments, aggregate value of manufacturing capital, and aggregate value of manufactured products:

STATES.	Rank in Population	AGRICULTURAL RANK.			MANUFACTURING RANK.		
		In Number of Farms	In Aggregate Value of Farms	In Aggregate Value of Products	In Number of Establishments	In Capital	In Value of Products
Alabama	17	15	28	16	29	30	32
Arkansas	25	19	30	21	33	37	36
California	24	------	------	------	------	------	------
Colorado	35	37	36	36	36	35	31
Connecticut	28	32	22	31	16	6	7
Delaware	37	35	34	35	35	24	28
Florida	34	33	37	34	37	36	37
Georgia	13	13	23	10	20	22	22
Illinois	4	1	3	1	4	5	4
Indiana	6	6	5	6	6	12	10
Iowa	10	7	6	4	11	18	19
Kansas	20	14	12	17	25	29	24
Kentucky	8	9	10	12	15	17	17
Louisiana	22	25	32	22	30	27	25
Maine	27	22	26	29	17	16	15
Maryland	23	26	18	26	12	14	13
Massachusetts	7	27	19	27	5	3	3
Michigan	9	12	7	8	7	8	9
Minnesota	26	21	15	19	21	19	16
Mississippi	18	18	27	13	31	34	35
Missouri	5	4	8	7	8	11	8
Nebraska	30	23	25	24	32	33	33
Nevada	38	38	38	38	38	38	38
New Hampshire	31	31	29	32	22	15	18
New Jersey	19	30	16	25	10	7	6
New York	1	3	2	2	1	1	1
North Carolina	15	11	20	18	19	26	29
Ohio	3	2	1	3	3	4	5
Oregon	36	34	36	33	34	32	34
Pennsylvania	2	5	4	5	2	2	2
Rhode Island	33	36	35	37	27	9	14
South Carolina	21	20	31	23	28	28	30
Tennessee	12	10	14	14	18	23	21
Texas	11	8	17	11	23	31	27
Vermont	32	29	24	28	24	21	23
Virginia	14	17	13	20	14	20	20
West Virginia	29	24	21	30	26	25	26
Wisconsin	16	16	9	9	9	10	11

CERTAIN INDUSTRIES EMPLOYING A LARGE PROPORTION OF WOMEN AND YOUNG CHILDREN.

INDUSTRY.	Total Persons Employed.	Per Cent of Males over 16 Years.	Per Cent of Females over 15 Years.	Per Cent of Children and Youth.
Bookbinding and blank-book making	10,612	48.31	45.53	6.16
Carpet weaving	20,371	49.60	42.07	8.33
Men's clothing	160,813	48.04	50.37	1.59
Women's clothing	25,192	10.30	88.33	1.37
Cotton goods	185,472	34.57	49.14	16.29
Men's furnishing goods	11,174	11.40	85.60	3.00
Hosiery and knit goods	28,885	26.02	61.30	12.68
Millinery and lace goods	6,555	14.81	80.06	5.13
Shirts	25,687	11.20	86.37	2.43
Silk and silk goods	31,337	29.92	52.32	17.76
Straw goods	10,948	29.94	68.52	1.54
Tobacco—chewing, smoking, and snuff*	32,756	45.44	32.90	21.66
Umbrellas and canes	3,608	41.69	51.52	6.79
Woolen goods	86,504	54.31	33.95	11.74
Worsted goods	18,803	34.22	50.38	15.40

* Oddly enough, women are not employed in anything like an equal proportion in the manufacture of cigars. The respective numbers are: Males above 16 years, 40,099; females above 15 years, 9,108; children, 4,090.

CERTAIN INDUSTRIES EMPLOYING A SMALL PROPORTION OF WOMEN AND CHILDREN.

INDUSTRY.	Total Persons Employed.	Per Cent of Males over 16 Years.	Per Cent of Females over 15 Years.	Per Cent of Children and Youth.
Agricultural implements	39,580	96.80	0.18	3.02
Bread and other bakery products	22,448	84.15	9.83	6.02
Brick and tile	66,350	88.97	0.40	10.63
Carriages and wagons	45,394	96.11	0.60	3.29
Drugs and chemicals	9,545	85.32	11.92	2.76
Dyeing and finishing textiles	16,698	76.58	12.21	11.21
Flour and grist mills	58,407	99.71	0.07	0.22
Furniture	48,729	92.73	1.88	5.39
Glass	24,177	73.53	3.07	23.40
Jewelry	12,697	79.15	15.74	5.11
Distilled liquors	6,502	99.23	0.15	0.62
Malt liquors	26,220	99.16	0.11	0.73
Musical instruments	11,350	96.26	1.54	2.20
Printing and publishing	58,478	78.46	11.56	9.98
Sewing machines and attachments	9,553	90.36	2.60	7.04
Tinware, copperware, and sheet-ironware	26,248	91.07	3.25	5.68

This widely different tendency of the various manufacturing industries, as to calling into service women and young children, naturally results in producing very different proportions in the same respects between the several States and the several cities, according as those industries which employ many women and children, or those which employ few, prevail.

The following table shows for each State, which produces to the value of $20,000,000, the proportions in which the several classes contribute to the aggregate body of persons employed in manufactures:

STATE.	Total Persons Employed.*	Per Cent of Males over 16 Years.	Per Cent of Females over 15 Years.	Per Cent of Children and Youth.
California	----------	----------	----------	----------
Connecticut	112,915	66.97	25.55	7.48
Delaware	12,638	81.11	11.28	7.61
Georgia	24,875	76.13	14.55	9.32
Illinois	144,727	83.30	10.53	6.17
Indiana	69,508	89.30	5.20	5.50
Iowa	28,372	89.46	5.04	5.50
Kansas	12,062	92.35	5.25	4.40
Kentucky	37,391	82.77	9.44	7.79
Louisiana	12,167	83.60	10.97	5.43
Maine	52,954	66.91	26.02	7.07
Maryland	74,945	62.31	28.95	8.74
Massachusetts	352,255	64.96	30.09	4.95
Michigan	77,591	88.21	6.17	5.62
Minnesota	21,247	89.13	7.70	3.17
Missouri	63,995	84.95	8.56	6.75
New Hampshire	48,831	60.12	33.14	6.74
New Jersey	126,038	68.86	21.50	9.64
New York	531,533	68.58	25.86	5.56
North Carolina	18,109	70.78	16.23	12.99
Ohio	183,609	82.90	10.11	6.99
Pennsylvania	387,072	73.46	18.87	7.67
Rhode Island	62,878	58.94	29.06	12.00
Tennessee	22,445	87.21	5.33	7.46
Texas	12,159	95.77	0.96	3.27
Vermont	17,540	82.31	12.95	4.74
Virginia	40,184	71.62	15.29	13.09
West Virginia	14,311	90.14	2.42	7.44
Wisconsin	57,109	84.50	10.93	4.57

* As by the tables of manufactures.

The tendency to variation in the respects under consideration is shown even more strikingly in the case of single cities. Thus, in giving the statistics of Pennsylvania as a whole, we merge Pittsburgh, a city which has a very low proportion of women and children employed in manufactures, with Philadelphia, a city which has a high proportion.

We therefore give in the table following the proportions in which the several classes, according to age and sex, contribute to the aggregate number of persons employed in manufactures in the fifty principal cities:

No.	FIFTY CITIES.	Total Persons Employed.*	Per Cent of Males over 16 Years.	Per Cent of Females over 15 Years.	Per Cent of Children and Youth.
1	New York, New York	227,352	64.30	31.58	4.12
2	Philadelphia, Pennsylvania	185,527	60.95	30.62	8.43
3	Chicago, Illinois	79,414	78.62	15.34	6.04
4	Brooklyn, New York	47,587	77.97	14.75	7.28
5	Boston, Massachusetts	59,213	67.23	30.65	2.12
6	Saint Louis, Missouri	41,825	81.24	11.38	7.38
7	Cincinnati, Ohio	54,517	71.52	19.23	9.25
8	Baltimore, Maryland	56,338	60.50	32.19	7.31
9	San Francisco, California	28,442	83.19	12.62	4.19
10	Pittsburgh, Pennsylvania	36,930	86.68	4.55	8.77
11	Newark, New Jersey	30,046	73.72	17.46	8.82
12	Jersey City, New Jersey	11,138	71.49	21.78	6.73
13	Cleveland, Ohio	21,724	82.94	10.52	6.54
14	Milwaukee, Wisconsin	20,886	76.68	18.78	4.54
15	Buffalo, New York	18,021	83.42	9.96	6.62
16	Providence, Rhode Island	22,891	70.11	23.39	7.50
17	Louisville, Kentucky	17,448	77.26	16.21	6.53
18	Lowell, Massachusetts	20,039	46.00	47.42	6.58
19	Detroit, Michigan	16,110	77.45	15.08	7.47
20	Minneapolis, Minnesota	5,344	87.99	8.55	3.46
21	Indianapolis, Indiana	10,000	86.71	8.30	4.99
22	Worcester, Massachusetts	16,559	82.64	14.98	2.38
23	Lynn, Massachusetts	12,420	71.61	28.09	0.30
24	Cambridge, Massachusetts	7,543	82.26	15.54	2.20
25	Paterson, New Jersey	19,799	51.87	33.21	14.92
26	Troy, New York	22,434	46.08	49.54	4.38
27	Rochester, New York	14,607	63.61	27.74	8.65
28	Lawrence, Massachusetts	16,719	46.77	47.30	5.93
29	New Haven, Connecticut	15,156	65.97	31.54	2.49
30	Albany, New York	11,785	83.40	12.97	3.63
31	Richmond, Virginia	14,047	65.62	20.45	13.93
32	Fall River, Massachusetts	17,085	48.18	39.35	12.47
33	New Orleans, Louisiana	9,504	80.66	13.53	5.81
34	Syracuse, New York	10,966	68.51	26.18	5.31
35	Peoria, Illinois	4,067	88.98	7.70	3.32
36	Manchester, New Hampshire	10,838	42.74	53.03	4.23
37	Alleghany, Pennsylvania	6,471	85.75	9.49	4.76
38	Holyoke, Massachusetts	9,011	49.19	42.85	7.96
39	Reading, Pennsylvania	6,695	80.85	10.81	8.34
40	Wilmington, Delaware	7,852	87.51	5.84	6.65
41	Springfield, Massachusetts	7,360	66.32	29.05	4.63
42	Trenton, New Jersey	8,902	75.16	12.18	12.66
43	Dayton, Ohio	6,025	84.17	8.51	7.32
44	Washington, District Columbia	7,146	76.91	19.44	3.65
45	Hartford, Connecticut	6,300	72.59	21.79	5.62
46	Toledo, Ohio	6,738	74.62	15.14	10.24
47	Bridgeport, Connecticut	7,508	72.93	24.07	3.00
48	Saint Paul, Minnesota	5,230	75.14	20.88	3.98
49	Salem, Massachusetts	4,181	62.95	31.31	5.74
50	New Bedford, Massachusetts	5,812	67.36	26.46	6.18

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* As by the tables of manufactures.

NATIONALITY IN MANUFACTURING INDUSTRY.

The comparative aptitude of our foreign population as a whole for the several grand classes of occupations may be seen by looking at the following table, derived from the statistics of occupations:

Grand Class of Occupations.	Total.	Per cent of persons engaged who are natives of the United States.	Per cent of persons engaged who are natives of all foreign countries.
All occupations	100	79.91	20.09
Agriculture	100	89.40	10.60
Professional and personal services	100	75.52	24.48
Trade and transportation	100	74.67	25.33
Manufacturing, mechanical, and mining	100	68.05	31.95

From this it appears that persons of foreign birth constitute a larger part of the total number of persons employed in manufacturing, mechanical, and mining pursuits than is the case in any other of the grand class of gainful occupations.

As between the different industries embraced in this great class, the foreign element shows very different aptitudes.

The following table shows for each recognized occupation within this class, which employs as many as 20,000 persons, first, the proportion in which the total number of operatives engaged is made up of persons of native and persons of foreign birth; and, secondly, the proportions in which the total number of persons of foreign birth engaged is made up from the different foreign countries on the list:

INDUSTRIES.	Operatives.			Foreign per Cent of each Class.						
	Total.	Per Cent of Native.	Per Cent of Foreign.	Total.	Ireland.	Germany.	Great Britain.	Scandinavia.	British America.	Other Countries.
Apprentices to trades	100	90.76	9.24	100	14.55	32.09	18.03	4.00	13.45	17.83
Bakers	100	43.84	56.16	100	11.53	65.68	7.85	1.23	4.18	9.53
Blacksmiths	100	72.71	27.29	100	27.04	32.10	15.93	4.78	12.03	7.22
Boot and shoemakers	100	64.24	35.76	100	25.13	40.09	9.66	3.62	10.92	10.58
Brick and tile makers	100	68.17	31.83	100	20.28	27.21	7.74	4.04	30.04	10.69
Butchers	100	61.66	38.34	100	11.92	62.15	10.67	.99	3.84	10.43
Cabinet makers	100	58.23	41.77	100	5.35	63.00	6.91	5.99	6.71	12.04
Carpenters and joiners	100	77.04	22.96	100	16.55	35.46	15.41	6.20	17.55	8.73
Carriage and wagon makers	100	75.45	24.55	100	11.36	50.57	11.58	4.44	12.99	9.06
Cigar makers	100	55.43	44.57	100	3.38	47.48	5.61	.82	2.08	40.63
Coopers	100	67.09	32.91	100	20.25	54.79	5.00	2.34	8.18	9.41
Cotton mill operatives	100	55.37	44.63	100	26.04	2.64	21.43	.37	48.03	1.49
Employés in manufacturing establishments	100	71.56	28.44	100	26.97	33.65	16.86	2.00	8.85	11.67
Engineers and firemen	100	72.82	27.18	100	32.28	19.94	30.27	2.41	9.15	5.95
Fishermen and oystermen	100	73.33	26.67	100	9.39	6.94	5.27	8.28	25.53	44.59
Gold and silver workers and jewelers	100	72.91	27.09	100	12.01	42.27	20.17	3.24	5.73	16.58
Harness and saddle makers	100	74.50	25.50	100	19.29	43.11	11.08	2.38	11.91	12.23
Iron and steel workers and shop operatives	100	63.67	36.33	100	40.21	22.37	24.45	2.51	5.38	5.13
Leather curriers, dressers, finishers, and tanners	100	54.26	45.74	100	44.16	30.13	6.92	3.19	8.53	7.06
Lumbermen and raftsmen	100	65.82	34.18	100	8.42	9.36	7.13	12.56	53.78	8.75
Machinists	100	69.88	30.12	100	20.70	26.94	32.26	3.20	9.04	7.87
Manufacturers	100	73.73	26.27	100	12.51	43.86	23.20	1.32	6.07	13.03
Marble and stonecutters	100	55.41	44.59	100	42.51	19.76	21.91	1.75	7.43	7.01
Masons, brick and stone	100	64.63	35.37	100	34.79	32.71	15.83	3.65	6.15	6.87
Mill and factory operatives	100	74.21	25.79	100	26.74	21.20	23.82	3.05	16.11	9.38
Millers	100	84.63	15.37	100	10.94	41.07	23.72	4.41	10.93	8.93
Milliners, dressmakers, and seamstresses	100	83.95	16.05	100	35.36	20.30	15.51	3.62	15.39	9.82
Miners	100	46.11	53.89	100	20.17	7.94	37.58	3.82	4.50	25.99
Painters and varnishers	100	76.05	23.95	100	20.06	33.33	20.57	5.71	10.19	10.14
Paper mill operatives	100	66.80	33.20	100	52.75	9.88	16.95	1.13	15.19	5.10
Plasterers	100	72.44	27.56	100	43.17	20.05	20.08	2.68	8.00	6.02
Printers, lithographers, and stereotypers	100	83.00	17.00	100	22.96	27.00	25.39	2.99	13.41	8.25
Saw and planing mill operatives	100	73.29	26.71	100	8.33	24.13	5.43	14.30	33.69	14.06
Tailors and tailoresses	100	46.48	53.52	100	14.38	52.65	7.01	5.67	3.26	17.06
Tinners and tinware makers	100	75.86	24.14	100	17.73	44.59	15.42	3.03	8.99	10.24
Tobacco factory operatives	100	91.31	8.69	100	22.66	37.33	7.94	1.69	4.62	25.79
Woolen mill operatives	100	60.72	39.28	100	36.85	10.88	30.36	1.39	17.63	2.83

Pages might be written of appropriate comment upon the foregoing table. Thus, bearing in mind that the number of Germans engaged in all branches of productive industry is to the number of Irish as 13 to 10, we find more than 5 Germans to 1 Irishman; as cabinet makers, 12 to 1; as cigar makers, 14 to 1. On the other hand there are 10 Irish in cotton mills to 1 German.

Although British Americans are only about one half the Irish engaged in manufacturing and mechanical pursuits, and are considerably less than one half the Germans, there are more of British Americans in saw and planing mills, and in cotton mills, than of Germans and Irish combined, while British Americans as lumbermen and raftsmen exceed the men of all other nationalities from whatever quarter of the globe.

These various industrial aptitudes of the men of the several nationalities appearing in our tables naturally cause those nationalities to be represented in very different proportions in the several cities, States, and sections.

The following table gives the proportions in which the industrial classes of each State producing to the value of $20,000,000 (manufactures) are divided (1) between persons of native and persons of foreign birth, and (2) the proportions in which the aggregate foreign born class is divided among the several nationalities recognized in the tables of occupations:

STATES.	Population	All persons engaged in Manufacturing, Mechanical, and Mining Industries.			Total per Cent	Per Cent of Persons of Foreign Birth engaged in Manufacturing, Mechanical, and Mining Industries, Born in—					
		Total per Cent	Per Cent Native	Per Cent Foreign		Ireland	Germany	Great Britain	Scandinavia	British America	Other Countries
The United States	50,155,783	100	68.05	31.95	100	23.18	30.03	18.42	3.64	12.56	12.17
California	864,694	100	40.65	59.35	100	13.77	13.30	12.63	2.22	7.41	50.67
Connecticut	622,700	100	67.59	32.41	100	42.36	13.55	19.85	2.05	18.71	3.48
Delaware	146,608	100	87.13	12.87	100	47.12	18.78	25.97	1.04	1.87	5.22
Georgia	1,542,180	100	96.52	3.48	100	31.90	29.00	21.72	2.47	3.03	11.88
Illinois	3,077,871	100	56.67	43.33	100	13.80	40.85	17.35	11.76	5.63	10.61
Indiana	1,978,301	100	81.70	18.30	100	12.00	57.79	16.37	1.94	3.25	8.65
Iowa	1,624,615	100	71.75	28.25	100	10.46	41.34	19.27	11.32	7.57	10.04
Kansas	996,096	100	78.64	21.36	100	12.80	30.16	26.77	10.34	9.37	10.56
Kentucky	1,648,690	100	81.72	18.28	100	18.72	59.32	12.38	0.24	2.11	7.24
Louisiana	936,946	100	74.40	25.60	100	15.85	40.74	6.95	0.82	1.83	33.78
Maine	648,936	100	82.19	17.81	100	15.58	1.59	18.57	1.23	60.48	2.55
Maryland	934,943	100	79.38	20.62	100	15.27	65.05	12.44	0.28	1.31	5.65
Massachusetts	1,783,085	100	64.35	35.65	100	39.66	4.65	18.67	1.48	32.72	2.82
Michigan	1,636,937	100	56.57	43.43	100	9.19	23.85	16.88	5.71	34.62	9.75
Minnesota	780,773	100	52.44	47.56	100	7.18	28.86	8.39	28.99	17.93	8.65
Missouri	2,168,380	100	68.06	31.94	100	16.77	55.25	12.00	1.66	3.71	10.61
Nebraska	452,402	100	69.64	30.36	100	10.01	35.47	17.35	11.71	9.87	15.59
New Hampshire	346,991	100	72.71	27.29	100	20.72	1.78	10.96	0.42	65.22	0.90
New Jersey	1,131,116	100	68.32	31.68	100	28.57	36.04	23.76	1.00	1.76	8.87
New York	5,082,871	100	61.23	38.77	100	28.87	38.14	13.93	1.41	6.48	11.17
North Carolina	1,399,750	100	98.02	1.98	100	14.02	14.74	22.54	1.59	3.32	43.79
Ohio	3,198,062	100	71.03	28.97	100	11.69	50.82	22.29	0.54	4.48	10.18
Pennsylvania	4,282,891	100	73.60	26.40	100	31.02	30.55	29.14	1.61	1.80	5.85
Rhode Island	276,531	100	60.88	39.12	100	35.19	2.65	27.28	1.09	31.83	1.96
Tennessee	1,541,359	100	92.97	7.03	100	25.32	28.75	26.26	3.15	3.00	13.52
Texas	1,591,749	100	74.01	25.99	100	12.06	36.59	13.52	2.47	3.94	31.42
Vermont	332,286	100	75.30	24.70	100	23.66	1.74	13.96	0.39	58.74	1.51
Virginia	1,512,565	100	97.04	2.96	100	23.45	33.78	27.09	1.07	3.05	11.56
West Virginia	618,457	100	86.96	13.04	100	25.39	42.52	25.79	0.20	2.22	3.88
Wisconsin	1,315,497	100	51.88	48.88	100	5.90	49.33	9.97	11.43	10.54	12.83

CHAPTER II.

COST OF LIVING, ETC.

GREAT BRITAIN AND IRELAND.

England.

The manufacturing supremacy of England has necessarily devel-
ped a great labor element in that country, and it may be said that,
s England has led the nations in commerce and manufacture, her
rtisans, mechanics, and workingmen in general, have also led the
bor element of Europe.

Rates of Wages.—In laying before you the following statements
howing the rates of wages, as averaged from the reports herewith
ubmitted, throughout England, as compared with those prevailing
n New York, Chicago, and San Francisco, it should be remarked
hat in many cases the English workingman appears to receive a
omparatively high rate of wages. He only works on half, or two
hirds time, thus gratifying his desire to preserve a high rate of wages
t the expense of time; a sentimental fiction which is neither profit-
ble nor substantial.

atement showing the Weekly Rates of Wages Paid the following Trades in England and the Rates Paid to similar Trades in New York, Chicago, and in San Francisco.

OCCUPATIONS.	England.	New York.	Chicago.	San Francisco.
ricklayers	$8 12	$12 00 to 15 00	$6 00 to 10 50	$24 00 to 30 00
asons	8 16	12 00 to 18 00	12 00 to 15 00	18 00 to 24 00
arpenters and joiners	8 25	9 00 to 12 00	7 50 to 12 00	12 00 to 21 00
asfitters	7 25	10 00 to 14 00	10 00 to 12 00	15 00 to 21 00
ainters	7 25	10 00 to 16 00	6 00 to 12 00	15 00 to 21 00
lasterers	8 10	10 00 to 15 00	9 00 to 15 00	24 00 to 30 00
lumbers	7 75	12 00 to 18 00	12 00 to 21 00	15 00 to 24 00
laters	7 90	10 00 to 15 00	12 00 to 18 00	15 00 to 18 00
lacksmiths	8 12	10 00 to 14 00	9 00 to 12 00	12 00 to 24 00
akers	6 50	5 00 to 8 00	8 00 to 12 00	12 00 to 15 00
ookbinders	7 83	12 00 to 18 00	9 00 to 20 00	15 00 to 24 00
hoemakers	7 35	12 00 to 18 00	9 00 to 18 00	12 00 to 18 00
utchers	7 23	8 00 to 12 00	12 00 to 18 00	12 00 to 18 00
abinet makers	7 70	9 00 to 13 00	7 00 to 15 00	13 50 to 18 00
oopers	7 30	12 00 to 16 00	6 00 to 15 00	13 50 to 18 00
oppersmiths	7 40	12 00 to 15 00	15 00 to 21 00	13 50 to 18 00
utlers	8 00	10 00 to 13 00	----------------	11 50 to 16 50
ngravers	9 72	15 00 to 25 00	9 00 to 30 00	18 00 to 30 00
rseshoers	7 20	12 00 to 18 00	15 00 to 21 00	15 00 to 21 00
llwrights	7 50	10 00 to 15 00	12 00 to 21 00	21 00 to 30 00
nters	7 75	8 00 to 18 00	12 00 to 18 00	15 00 to 22 50
dlers	6 80	12 00 to 15 00	6 00 to 12 00	15 00 to 18 00
nakers	7 30	12 00 to 18 00	12 00 to 15 00	24 00 to 30 00
nsmiths	7 30	10 00 to 14 00	9 00 to 12 00	15 00 to 21 00
ailors	5 00 to 7 30	10 00 to 18 00	6 00 to 18 00	8 75 to 13 75
rass finishers	7 40	10 00 to 14 00	8 00 to 15 00	15 00 to 21 00
aborers, porters, etc.	5 00	6 00 to 9 00	5 50 to 9 00	9 00 to 12 00

That you may be able to make fuller comparison of the relative purchasing power of the wages of the English and American workingmen, I submit the following table, showing the food prices as averaged from all the English reports and the prices in New York, Chicago, and San Francisco:

Statement Showing the Retail Prices of the Necessaries of Life in England and the United States.

ARTICLES.	England—In Cents.	New York—In Cents.	Chicago—In Cents.	San Francisco—In Cents.
Bread, per pound	3½ to 4½	4 to 4½	4 to 4½	*5 to 10
Flour, per pound	3½ to 4½	3 to 4½	2½ to 4½	2½ to 3
Beef—				
For roasting, per pound	22	12 to 16	8 to 12½	12 to 15
For soup, per pound	15	6 to 8	5	6 to 10
Rump steak, per pound	26½	14 to 16	8 to 12½	15 to 20
Corned, per pound	18	8 to 12	4 to 7	10 to 15
Veal—				
Forequarters, per pound	18	9 to 10	6 to 10	8 to 12
Hindquarters, per pound	22½	12 to 14	10 to 12	12 to 18
Cutlets, per pound	27	14 to 16	12½ to 15	15
Mutton—				
Forequarters, per pound	17	9 to 10	5 to 12½	7 to 8
Hindquarters, per pound	22	12 to 14	5 to 15	12 to 15
Chops, per pound	25	14 to 16	10 to 15	15 to 18
Pork—				
Fresh, per pound	16½	8 to 10	4 to 8	15 to 18
Salted, per pound	15	8 to 10	6 to 12	10 to 15
Bacon, per pound	12 to 16	8 to 10	7 to 12	12 to 15
Ham, per pound	13½ to 23	8 to 12	7 to 15	14 to 16
Shoulder, per pound	12	8 to 10	4 to 10	10 to 15
Sausage, per pound	18	8 to 10	6 to 10	15 to 20
Lard, per pound	15 to 18	10 to 12	6 to 10	12 to 15
Codfish, dry, per pound	8	6 to 7	5 to 9	10 to 15
Butter, per pound	29 to 38	25 to 32	16 to 40	30
Cheese, per pound	15 to 21	12 to 15	5 to 16	15 to 25
Potatoes, per bushel	112 to 200	112 to 160	60 to 80	†100 to 150
Rice, per pound	3½ to 8	8 to 10	5 to 10	6
Beans, per quart	9	7 to 10	5 to 9	6
Milk, per quart	6 to 9	8 to 10	3 to 6	10
Eggs, per dozen	19 to 30	25 to 30	10 to 24	20 to 30
Oatmeal, per pound	3½ to 4	4 to 5	4 to 5	4 to 6
Tea, per pound	43 to 88	50 to 60	25 to 100	70
Coffee, per pound	28 to 42	20 to 30	15 to 40	25 to 35
Sugar, per pound	5½ to 9	8 to 10	7 to 11	8½ to 10
Soap, per pound	5¼ to 9	6 to 7	3 to 8	7 to 10
Starch, per pound	10 to 12	8 to 10	5 to 10	9 to 10
Coal, per ton	320 to 410	525	300 to 675	8 to 16

* Per loaf. † Per 100 pounds.

It will be seen, that while wages in New York, Chicago, and San Francisco are about twice the average wages throughout England, the prices of the necessaries of life are lower in those two cities than the average prices throughout England.

It is well that your attention should be specially drawn to the erroneous opinions which have more or less prevailed, especially in the minds of our working people in the United States for the past few years, that wages were higher and the cost of living less in England than in this country.

At a time of unusual depression in all trades in the United States, strikes of certain trades occurred in England. Some British manufacturers, taking advantage of the occasion, induced a number of working men from this side to go over and take the places of the English working men on strike.

This gave rise to the idea, that work was more easily obtained, and that wages were higher, in that country than in the United States.

It may be remarked, that the principal portion of those workingmen were natives of Great Britain, many of them immigrants newly arrived in the United States, and all of them out of employment.

The few Americans who did go were repaid for their venture by much humiliation and suffering, as the many reports from our Consuls in England have testified; so that there is scarcely any need to refute the foregoing fallacy by any further consular testimony; but the Consul at Bristol puts the question in so graphic a manner, that I cannot refrain from quoting his words:

> No laborer should allow himself to be enticed, by imagining that he could better his condition by leaving the United States to return to his native country, if born in Europe. A number of such laborers, and also some mechanics, have, during the last two years, called upon this consulate for help to get back to the United States, cursing the day when they left America for Europe, where neither milk nor honey is flowing. *Compared with Europe, the United States is a paradise for a sober and faithful workingman.*

In regard to the question of food-prices in England and in the United States, no stronger argument can be advanced to dissipate the idea that workingmen can live cheaper in that country than in this, than the fact that Great Britain imported from the United States, during a recent year, "necessaries of life" to the following amounts: Wheat, $50,000,000; Indian corn, $300,000; flour, $8,300,000; lard, $6,800,000; pork, salted, $3,000,000; butter, $2,870,000; fresh beef, $2,000,000; refined sugar, $1,650,000; pease, $1,500,000; canned and preserved meats, $1,400,000; fruits, raw, $1,243,000; molasses, $653,000; coffee, $516,000; oats, $343,000; barley, $264,000—a total food-supply of over $171,000,000!

In regard to the food-living of the English workingman it may be said that it is regulated solely by his ability to buy; he will have as much strong and wholesome food—and he is a good eater—as he can purchase, meat entering into his fare more plentifully than into the fare of any other workingman in Europe.

The Consul at Bristol says that the English workingman of to-day eat fully three times more meat than the English workingman of twenty years ago. It may, also, be remarked that American bacon is largely used by the English workingman, as also other American meats when they can be purchased.

There would seem to be no disposition to lay anything by for the "rainy day," the English workingman never stinting himself in his food, as on the Continent, for the purpose of laying by a reserve. This disposition of living each day in itself—coupled with the periodic strikes, which break up the even run of wages and bring so much suffering to his wife and children—renders the life of the English workingman a spasmodic struggle for existence; and it may be doubted whether the family of the average English laborer or mechanic is any better off, year in and year out, than the family of the German or French laborer or mechanic. It certainly has not that sentimental and musical enjoyment which throws such pictorial light about the poor man's home in the latter countries.

The weekly wages, as averaged from these reports, of agricultural laborers throughout England, are as follows:

Men, without board or lodging	$4 25
Men, with board and lodging	$1 50 to 2 40
Women, without board or lodging	1 80 to 3 20
Women, with board and lodging	0 60 to 1 05
Women, house servants, per annum	$34 00 to $49 00

IRELAND.

No country in Europe, perhaps, affords a better illustration of the commercial vigor and manufacturing activity which are ever the results of diversified industry than does Ireland by the almost total absence of the same, and the consequent monotony which is ever the accompaniment of such a commercial condition as prevails in that country.

With the exception of the linen manufacture, omitting local efforts for self-supply, Ireland may be said to have no national industry outside of agriculture; and as the great tendency of agriculture in that country is toward pasture farming—over one third of all the arable land being now given up to pasturage and meadow land—and as the labor required to tend cattle and cut and save hay is comparatively little, it follows that even the requirements of this one industry, as far as labor is concerned, must be growing less year by year.

Emigration, however, would seem to draw off Ireland's surplus labor population, as the wages of farm hands in that country, according to the reports submitted, are very little less than the wages which prevail in England and Scotland, as may be seen by the following statement:

Weekly Wages Paid to Agricultural Laborers in Ireland, England, Scotland, and California.

Description.	Ireland.	England.	Scotland.	California.
Men, without board or lodging	$3 40	$3 60	$4 25	$7 50 to $9 00
Men, with board and lodging	1 30	2 60	$1 50 to 2 00	6 00
Women, without board or lodging	2 16	1 80	1 80 to 3 25	7 00
Women, with board and lodging	0 75	1 15	0 60 to 1 00	5 00
Women, house servants, per year	40 00	60 00	34 00 to 49 00	240 00

In a large number of cases, the agricultural laborers of Ireland supplement their wages by the produce of small plots of ground attached to their cabins. As a general thing, a fair share of the field work is performed by women.

To enable you to compare the rates of wages paid to the trades in Ireland with the rates paid to similar trades in New York, Chicago, and San Francisco, I submit the following table:

Statement showing the Weekly Wages Paid by the Board of Public Works throughout Ireland to the Building Trades and the General Rates Paid similar Trades in New York, Chicago, and San Francisco.

Building Trades.	Ireland.	New York.	Chicago.	San Francisco.
Bricklayers	$7 58	$12 00 to $15 00	$6 00 to $10 50	$24 00 to $30 00
Masons	7 58	12 00 to 18 00	12 00 to 15 00	18 00 to 24 00
Carpenters and joiners	7 33	9 00 to 12 00	7 50 to 12 00	12 00 to 21 00
Gasfitters	7 95	10 00 to 14 00	10 00 to 12 00	15 00 to 21 00
Painters	7 54	10 00 to 16 00	6 00 to 12 00	15 00 to 21 00
Plasterers	7 68	10 00 to 15 00	9 00 to 15 00	24 00 to 30 00
Plumbers	8 46	12 00 to 18 00	12 00 to 21 00	15 00 to 24 00

Food and Food Prices.—In regard to the food prices in Ireland and in the United States, it is enough to say that the principal part of the food used by the workingmen of Ireland comes from the United States.

In regard to the manner and cost of living of the working people, the Consul at Cork says: "The food is made up of a selection from tea, bread, oatmeal, potatoes, dried fish, and among the poorer classes, a coarse Indian meal instead of oatmeal, at an average expense to each person of 14 cents per day. The mechanic pays something more for his lodging, but in other respects his living is the same as the laborer."

The Consul at Londonderry writes: "The food of all laborers here is Indian meal (principally), oatmeal, potatoes, and bacon next. Tea may be said to be in universal use."

With wages almost equal to those paid in England and Scotland, the food of the working people of Ireland is much inferior to the food of the English working people, lacking the solidity of meat, cheese, beer, etc., consumed in such comparatively large proportions by the latter. The English are also better clothed and lodged, the air of thrift and comfort which is so apparent in the homes of the English mechanic, being almost totally unknown to the hard-working Irishman. Much of this undoubtedly arises from the diversity of industries in England, many members of the same family finding employment in mills and factories, etc., and thus helping to swell the general fund, while the single earning of the head of the family in Ireland, as a general rule, has to support the whole. The Consul at Belfast says that with the prevalent rates of wages the mechanic or laborer can save nothing.

SCOTLAND.

I take pleasure in calling your attention to the very interesting and comprehensive reports from the several Consulates in Scotland, which have fully answered all the requirements of the department circular.

The agricultural capacity of Scotland is, perhaps, more limited, according to area, than any other country in Europe, but it is doubtful whether the agriculture of any other country has been prosecuted with more educated skill and industry.

The intelligence which was brought to the aid of agriculture in Scotland at a time when intelligence was the exception, and not considered essential to that industry, has made Scotch farming synonymous with all that is advanced in agriculture.

This intelligence, common, as a rule, to employer and employé, makes these reports, where they treat of agriculture, specially interesting.

Rates of Wages.—The average weekly wages of agricultural laborers in Scotland are as follows—although it is necessary to read the particular reports, in order to arrive at a true understanding of the special advantages and disadvantages of Scottish rural life, no two districts being alike in habits and customs:

Men, without board or lodging	$3 60
Men, with board and lodging	2 60
Women, without board or lodging	1 80
Women, with board and lodging	1 15
Women, house servants, per annum	60 00

Agricultural wages in Scotland have increased ten per cent during the last five years, and twenty-five per cent during the last fifteen years.

In regard to the manner of life of the agricultural laborers, I would specially refer to that part of Consul Robeson's report which treats upon the subject. Their food consists of oatmeal, milk, and potatoes, with a little meat and beer sometimes added. The Consul remarks, that were it not for extravagance in dress the Scotch farm laborers could save considerable money, and that on the whole, they are the opposite of saving and thrifty.

In turning from the agricultural to the mechanical and manufacturing classes in the great trade centers of Scotland, it will be noted, by comparison, that wages seem to be a trifle higher than the rates prevailing in England; but if the great depression in the manufacturing interests of Scotland are taken into consideration, together with consequent short time and enforced idleness, it might be questioned whether the average rates of wages in Scotland would equal those of England.

Statement showing the Weekly Wages Paid the following Trades in Scotland and the Rates Paid to similar Trades in New York, Chicago, and San Francisco.

OCCUPATION.	Scotland.	New York.	Chicago.	San Francisco.
Bricklayers	$9 63	$12 00 to 15 00	$6 00 to 10 50	$24 00 to 30 00
Masons	8 28	12 00 to 18 00	12 00 to 15 00	18 00 to 24 00
Carpenters and joiners	8 12	9 00 to 12 00	7 50 to 12 00	12 00 to 21 00
Gasfitters	8 40	10 00 to 14 00	10 00 to 12 00	15 00 to 21 00
Painters	8 16	10 00 to 16 00	6 00 to 12 00	15 00 to 21 00
Plasterers	10 13	10 00 to 15 00	9 00 to 15 00	24 00 to 30 00
Plumbers	7 13	12 00 to 18 00	12 00 to 21 00	15 00 to 24 00
Slaters and lathers	8 30	10 00 to 15 00	12 00 to 18 00	15 00 to 18 00
Blacksmiths	7 04	10 00 to 18 00	9 00 to 12 00	12 00 to 24 00
Bakers	6 63	5 00 to 8 00	6 00 to 12 00	12 00 to 18 00
Bookbinders	6 52	12 00 to 18 00	9 00 to 20 00	15 00 to 24 00
Shoemakers	7 35	8 00 to 12 00	9 00 to 18 00	12 00 to 18 00
Butchers	4 75	9 00 to 13 00	12 00 to 18 00	12 00 to 18 00
Cabinet makers	8 48	12 00 to 16 00	7 00 to 15 00	13 50 to 18 00
Coopers	6 10	12 00 to 15 00	6 00 to 15 00	13 50 to 18 00
Coppersmiths	7 13	10 00 to 13 00	15 00 to 21 00	13 50 to 18 00
Cutlers	6 25	15 00 to 25 00	----------------	11 50 to 16 50
Engravers	8 75	12 00 to 18 00	9 00 to 30 00	18 00 to 30 00
Horseshoers	7 00	12 00 to 18 00	15 00 to 21 00	15 00 to 21 00
Millwrights	7 50	10 00 to 15 00	15 00 to 21 00	21 00 to 30 00
Printers	7 52	8 00 to 18 00	12 00 to 18 00	15 00 to 22 50
Saddlers and harness makers	6 15	12 00 to 15 00	6 00 to 12 00	15 00 to 18 00
Sailmakers	6 33	12 00 to 18 00	12 00 to 15 00	24 00 to 30 00
Tinsmiths	6 00	10 00 to 14 00	9 00 to 12 00	15 00 to 21 00
Tailors	7 00	10 00 to 18 00	6 00 to 18 00	8 75 to 13 75
Brass founders	6 92	10 00 to 14 00	8 00 to 15 00	15 00 to 21 00
Laborers, porters, etc.	4 50	6 00 to 9 00	5 50 to 9 00	9 00 to 12 00

While the foregoing table shows the rates of wages in New York, Chicago, and San Francisco to be on an average once and a half as much as the rates in Scotland, the prices of the necessaries of life are higher in Scotland than in the United States. The Consul at Glasgow says that rent, clothing, bread, sugar, tea, and coffee are about the same in that city as in New York.

Habits of the Workingmen.—In regard to the habits of the mechanical and manufacturing classes in the cities and trade centers of

Scotland, it may be said that their besetting sin is whisky drinking, and that to this, and to its great ally, strikes, may be attributed the greater part of the misery and degradation which afflict the labor population.

In speaking of the necessaries of life, the Consul at Glasgow says: "Whisky, which is here considered a positive necessity by the great mass of laborers, and which costs about three hundred per cent more than in the United States, and beer, which is comparatively cheap and bad, absorb the larger portions of the laborers earnings."

Of the evils resulting from strikes, the Consul at Leith writes: "Strikes are of frequent occurrence in all trades, but, as a rule, they result in impoverishing the workman, who has, in the end, to return to his previous wages, or accept his employer's terms."

The rates of wages are at present seven per cent higher throughout Scotland than they were five years ago, but the increase in the cost of living has more than neutralized the increase of wages. The Consul at Glasgow is inclined to the belief that, if the present stagnation continues, wages will recede to even less than the rates of wages five years ago.

GERMANY.

Rates of Wages.—To enable you to compare the rates of wages paid in Germany with the rates prevailing in New York, Chicago, and in San Francisco, I herewith submit a statement showing the weekly wages earned, as averaged from the several reports in Germany, and the rates paid in those three cities:

Weekly Wages in Germany, New York, Chicago, and San Francisco.

OCCUPATIONS.	Germany.	New York.	Chicago.	San Francisco.
Bricklayers	$3 45	$12 00 to 15 00	$6 00 to 10 50	$24 00 to 30 00
Masons	4 00	12 00 to 18 00	12 00 to 15 00	18 00 to 24 00
Carpenters and joiners	4 18	9 00 to 12 00	7 50 to 12 00	12 00 to 21 00
Gasfitters	3 95	10 00 to 14 00	10 00 to 12 00	15 00 to 21 00
Painters	4 60	10 00 to 16 00	6 00 to 12 00	15 00 to 21 00
Plasterers	4 35	10 00 to 15 00	9 00 to 15 00	24 00 to 30 00
Plumbers	3 90	12 00 to 18 00	12 00 to 21 00	15 00 to 24 00
Slaters	3 90	10 00 to 15 00	12 00 to 18 00	15 00 to 18 00
Blacksmiths	3 90	10 00 to 14 00	9 00 to 12 00	12 00 to 24 00
Bakers	3 90	5 00 to 8 00	8 00 to 12 00	12 00 to 15 00
Bookbinders	3 90	12 00 to 18 00	9 00 to 20 00	15 00 to 24 00
Shoemakers	4 32	12 00 to 18 00	9 00 to 18 00	12 00 to 18 00
Butchers	4 20	8 00 to 12 00	12 00 to 18 00	12 00 to 18 00
Cabinetmakers	4 95	9 00 to 13 00	7 00 to 15 00	13 50 to 18 00
Coopers	4 35	12 00 to 16 00	6 00 to 15 00	13 50 to 18 00
Coppersmiths	3 90	12 00 to 15 00	15 00 to 21 00	13 50 to 18 00
Cutlers	3 90	10 00 to 13 00		11 50 to 16 50
Engravers	4 00	15 00 to 25 00	9 00 to 30 00	18 00 to 30 00
Horseshoers	3 50	12 00 to 18 00	15 00 to 21 00	15 00 to 21 00
Millwrights	4 95	10 00 to 15 00	15 00 to 21 00	21 00 to 30 00
Printers	3 90	8 00 to 18 00	12 00 to 18 00	15 00 to 22 50
Saddlers and harness makers	3 90	12 00 to 15 00	6 00 to 12 00	15 00 to 18 00
Sailmakers	3 90	12 00 to 18 00	12 00 to 15 00	24 00 to 30 00
Tinsmiths	3 60	10 00 to 14 00	9 00 to 18 00	15 00 to 21 00
Tailors	4 30	10 00 to 18 00	6 00 to 18 00	8 75 to 13 75
Brass founders	5 50	10 00 to 14 00	8 00 to 15 00	15 00 to 21 00
Laborers, porters, etc.	2 60	6 00 to 9 00	5 50 to 9 00	9 00 to 12 00

To enable you to carry the comparison still further, I submit a table showing the food-prices in Germany and in the United States:

Statement showing the Retail Prices of the Necessaries of Life in Germany, and the Prices of similar Articles in New York, Chicago, and in San Francisco.

ARTICLES.	Germany—In Cents.	New York—In Cents.	Chicago—In Cents.	San Francisco—In Cents.
Bread, per pound	3 to 7	4 to 4½	4 to 4½	*5 to 10
Flour, per pound	5½	4½ to 5	2½ to 4½	2½ to 3
Beef—				
Roast, per pound	22	12 to 16	8 to 12½	12 to 15
Soup, per pound	14	6 to 8	5	6 to 10
Rump, per pound	14	14 to 16	8 to 12½	15 to 20
Corned, per pound	13	8 to 12	4 to 7	10 to 15
Veal, per pound	14	8 to 12	6 to 12	10 to 15
Mutton, per pound	14½	9 to 14	5 to 15	7 to 18
Pork—				
Fresh, per pound	17	8 to 10	4 to 8	15 to 18
Salted, per pound	17	8 to 10	6 to 12	10 to 15
Bacon, per pound	20	8 to 10	7 to 12	12 to 15
Ham, per pound	20	8 to 12	7 to 15	14 to 16
Shoulder, per pound	19	8 to 10	4 to 10	10 to 15
Sausage, per pound	21	8 to 10	5 to 10	15 to 20
Lard, per pound	21	10 to 12	6 to 10	12 to 15
Butter, per pound	22	25 to 32	16 to 40	30
Cheese, per pound	24	12 to 15	5 to 16	15 to 25
Rice, per pound	9	8 to 10	5 to 10	6
Beans, per quart	10	7 to 10	5 to 9	6
Milk, per quart	4	8 to 10	3 to 6	10
Oatmeal, per pound	8	4 to 5	4 to 5	4 to 6
Tea, per pound	75	50 to 60	25 to 75	70
Coffee, per pound	35	20 to 30	15 to 40	25 to 35
Sugar, per pound	11	8 to 10	7 to 11	8½ to 10
Soap, per pound	10	6 to 7	3 to 8	7
Starch, per pound	9	8 to 10	5 to 10	9
Coal, per ton	4 25	5 25	3 00 to 6 75	8 00 to 10 00

* Per loaf.

It will be seen by the foregoing tables, that while the rates of wages in New York, Chicago, and San Francisco, are, on an average, three times the rates in Germany, the prices of the necessaries of life in those three cities are much less than the average prices for all Germany.

Assuming that, whenever the German workman can buy the greater part of the articles mentioned in the foregoing list, he buys the cheapest, the difference in favor of the American workingman is very marked.

The average weekly wages of the agricultural laborers of Germany are as follows:

Men, without board or lodging	$3 50
Men, with board and lodging	1 80
Women, without board or lodging	1 55
Women, with board and lodging	60

FRANCE.

There is no country in Europe whose labor habits and systems are more worthy of careful investigation than are those of France.

The French working people have, more truly than any other working people, illustrated that commendable phase of political economy getting the greatest possible result out of the most limited means. They look squarely and sensibly at their capital, and then limit their requirements within that capital; make the most and best of their lot, and fling a halo of sentiment about their lives of toil. For these reasons, the work-people of France, with as little remuneration and as scanty fare as those of almost any other country—much less than any of their neighbors—are the happiest and most contented labor population in Europe.

Rates of Wages.—Although the reports herewith submitted may not afford in all cases an exactly correct review of the wages prevailing throughout France, in other respects—customs and habits of the people and their modes of living—they will be found full and interesting.

In regard to agriculture—the greatest industry in France, comprising ten million land owners, over eighteen million, large and small, of the population being engaged therein—the average rate of wages is computed from the reports from Bordeaux, La Rochelle, Lyons, Nice, and St. Etienne.

The highest rate in any of these five reports are quoted for Bordeaux and La Rochelle, viz.: $3 60 per week, for men, without board or lodging; and the lowest from Lyons, $1 75 per week, without board or lodging.

The district of the Seine is not included in the rates here given; the agriculturists therein being engaged principally in market farming for Paris.

For this reason the agricultural wages given in the report of the Consul-General are exceptionally high, and if given with the five other reports would result in showing an unfair average.

The weekly wages, therefore, paid to agricultural laborers throughout France may be set down as follows:

Men, without board or lodging	$3 15
Men, with board and lodging	1 36
Women, without board or lodging	1 10

There is scarcely any necessity for saying that the French farm laborer must practice the closest economy to enable him to support himself and family on the foregoing wages. Not only does he do this, but in many cases he saves enough to work himself into independent proprietorship in the land. How this is accomplished must be a matter of such general interest as to excuse a somewhat detailed account thereof.

The Consul at Bordeaux, Department of the Gironde, writes: "The farm laborers are frequently economical to avariciousness, and many of them, in the course of time, become quite wealthy proprietors."

In many districts in France the laborers supplement their agricultural earnings by secondary employments, such as weaving, woodcutting, sawing, wooden-shoe making, etc. The Consul at Lyons says that from 8 to 10 per cent of the agricultural laborers in his district are engaged in these secondary employments, which yield to each laborer about $40 per annum.

Not only must the husband labor for the support of his family, but the wife and children must also labor for the general fund in order to make ends meet. The Lyons report gives a most interesting insight into the economies which enter into the yearly subsistence of the French agricultural laborer's family, and one cannot help being struck with the amount of sobriety, patience, and mutual sacrifices which the insight displays. Had this same economy and patient industry the scope and plentifulness which the more generous agricultural opportunities of the United States afford, to what happy results would it not lead?

The married farm laborer, who supports and lodges himself, may earn in the Lyons district $150 per annum, divided as follows: Husband's wages, $80; wife's wages, $30; children's wages, $40.

The cost of living to such a family, per annum, is calculated as follows:

Rent	$10 50
Bread	55 00
Meat	10 00
Vegetables	8 25
Wine, beer, and cider	7 00
Milk	5 25
Clothing	25 00
Groceries	10 00
Fuel	8 00
Taxes	2 00
Total	$141 00

An average struck from all the reports—seven in number—gives the following results in regard to the rates of wages paid to the several trades in France; the rates paid similar trades in New York, Chicago, and San Francisco, will help you to make comparison between both countries:

Statement showing the Rates of Weekly Wages Paid in France and the United States.

OCCUPATIONS.	France.	New York.	Chicago.	San Francisco.
Bricklayers	$4 00	$12 00 to 15 00	$6 00 to 10 50	$24 00 to 30 00
Masons	5 00	12 00 to 18 00	12 00 to 15 00	18 00 to 24 00
Carpenters and joiners	5 42	9 00 to 12 00	7 50 to 12 00	12 00 to 21 00
Painters	4 90	10 00 to 16 00	6 00 to 12 00	15 00 to 21 00
Plumbers	5 50	12 00 to 18 00	12 00 to 21 00	15 00 to 24 00
Slaters		10 00 to 15 00	12 00 to 18 00	15 00 to 18 00
Blacksmiths	5 45	10 00 to 14 00	9 00 to 12 00	12 00 to 24 00
Bakers	5 45	5 00 to 8 00	8 00 to 12 00	12 00 to 15 00
Bookbinders	4 85	12 00 to 18 00	9 00 to 20 00	15 00 to 24 00
Shoemakers	4 75	12 00 to 18 00	9 00 to 18 00	12 00 to 18 00
Butchers	5 42	8 00 to 12 00	12 00 to 18 00	12 00 to 18 00
Cabinetmakers		9 00 to 13 00	7 00 to 15 00	13 50 to 18 00
Coopers	7 00	12 00 to 16 00	6 00 to 15 00	13 50 to 18 00
Coppersmiths		12 00 to 15 00	15 00 to 21 00	13 50 to 18 00
Cutlers	4 63	10 00 to 13 00		11 50 to 16 50
Horseshoers	5 40	12 00 to 18 00	15 00 to 21 00	15 00 to 21 00
Printers	4 71	12 00 to 18 00	12 00 to 18 00	15 00 to 22 50
Saddlers and harness makers	5 00	12 00 to 15 00	6 00 to 12 00	15 00 to 18 00
Tinsmiths	4 40	10 00 to 14 00	9 00 to 12 00	8 75 to 13 75
Tailors	5 10	10 00 to 18 00	6 00 to 18 00	15 00 to 21 00

The foregoing statement shows that wages in New York, Chicago, and San Francisco are, on an average, nearly three times as much as the wages throughout France.

It is to be regretted that the reports do not give any very extended information concerning the articles and prices of necessaries of life in the several districts of France. The following list, although very limited, may enable you to form an idea of the relative cost of food supplies in France and the United States:

Statement showing the Retail Prices of certain Articles of Food in the Cities of Bordeaux and La Rochelle, and in the Cities of New York, Chicago, and San Francisco.

ARTICLES.	Bordeaux (Cents).	La Rochelle (Cents).	New York (Cents).	Chicago (Cents).	San Francisco (Cents).
Bread, per ℔.	3	3	4 to 4½	4 to 4½	*5 to 10
Beef, per ℔.	16 to 20	16 to 24	8 to 16	4 to 12½	8 to 20
Mutton, per ℔.	17 to 19	16 to 23	9 to 16	5 to 15	10 to 15
Veal, per ℔.	17 to 20	15 to 24	8 to 24	6 to 15	10 to 15
Pork, per ℔.	12 to 14	16	8 to 10	4 to 12	12 to 15
Flour, per ℔.	----------------	4½ to 5	3½ to 4½	2½ to 4½	2½ to 3½
Coffee, per ℔.	----------------	30	20 to 30	15 to 40	25 to 35
Butter, per ℔.	----------------	30	25 to 32	16 to 40	20 to 35

*Per loaf.

When the workingmen of France are able to buy the foregoing articles, it may be assumed that they purchase the lowest priced. There is no doubt, therefore, that articles of food of the same qualities are very much cheaper in the United States than in France. Thus, while wages are very much higher in the United States than in France, the necessaries of life are cheaper with us.

The report of the Consulate-General at Paris gives the average daily wages throughout France as 45 cents, and the average annual income of the typical French family—father, mother, and five children, one of the latter old enough to work—as $180. The annual expenses of this family are: Bread, $66 40; meat, $17 60; vegetables and fruit, $11; wine and beer, $20 60; milk and eggs, $5 40; sugar and salt, $4 40; rent and taxes, $13 20; fire and lights, $7; clothing, $18; sundries, $10; total, $167 60.

SPAIN.

The reports herewith submitted from Spain are only four in number, viz.: from Barcelona, Cadiz, Malaga, and Santander; and, although not as minute or exhaustive as many of the reports from other countries, will be found interesting and instructive, dealing as they do with a class of people whose habits and customs are not as clearly understood in the United States as are like classes in other countries of Europe.

Rates of Wages.—The weekly rates of wages of agricultural laborers in Spain, as averaged from the submitted reports, are as follows:

Men, without board or lodging	$3 45
Women, without board or lodging	2 25
Women, house servants, per annum	40 00

The weekly wages paid the trades in Spain, and the wages paid similar trades in the United States, are as follows:

Occupations.	Spain.	New York.	Chicago.	San Francisco.
Bricklayers	$5 25	$12 00 to 15 00	$6 00 to 10 50	$24 00 to 30 00
Masons	4 80	12 00 to 18 00	12 00 to 15 00	18 00 to 24 00
Carpenters	4 88	9 00 to 12 00	7 50 to 12 00	12 00 to 24 00
Painters	4 80	10 00 to 16 00	6 00 to 12 00	15 00 to 21 00
Plasterers	7 20	10 00 to 15 00	9 00 to 15 00	24 00 to 30 00
Blacksmiths	4 65	10 00 to 14 00	6 00 to 12 00	12 00 to 24 00
Bakers	5 40	5 00 to 8 00	8 00 to 12 00	12 00 to 15 00
Bookbinders	3 60	12 00 to 18 00	9 00 to 20 00	15 00 to 24 00
Shoemakers	3 90	12 00 to 18 00	9 00 to 18 00	12 00 to 18 00
Cabinetmakers	4 20	9 00 to 13 00	7 00 to 15 00	13 50 to 18 00
Coopers	4 95	12 00 to 16 00	6 00 to 15 00	13 50 to 18 00
Tinsmiths	3 90	10 00 to 14 00	9 00 to 12 00	15 00 to 21 00
Tailors	3 90	10 00 to 18 00	6 00 to 18 00	8 75 to 13 75
Laborers, porters, etc	3 00	6 00 to 9 00	5 50 to 9 00	9 00 to 12 00

It will be seen by the foregoing statement that the Spanish workingmen scarcely average one third the wages paid in New York, Chicago, and San Francisco, while what are called the necessaries of life with us are much cheaper in the United States than in Spain.

Habits of the Workingmen.—The Consul at Barcelona says:

> The Catalonian laboring classes are certainly very laborious, and the most sober and frugal I have seen. During my four years' residence here I have never met an intoxicated person belonging to that class, yet wine is constantly drunk by the men, women, and children. Not being drunk for enjoyment, it is considered beneficial to health, and taken regularly, but sparingly, at every meal. The Catalonian people live mostly on greens, beans, potatoes, onions, garlic, dried codfish, and wine.
>
> *Andalusia.*—The farm laborers of Andalusia, fed by their employers, are allowed, daily, three pounds of bread, some oil, and a little vinegar. A portion of the bread is set aside, with the oil and the vinegar, to form the two meals of the "gaspacho," served to the farm hands. This gaspacho consists of bread, soaked in water, to which the oil and vinegar are added. In Winter it is served hot, in Summer cold. Any addition to this fare must be supplied by the laborer himself.—[Report from Consul at Cadiz.
>
> *Malaga.*—The laborer in the south of Spain is the most frugal of beings. He rarely, or never, eats meat. Indeed, it would be impossible for him to do so and live upon his earnings.—[From the report of the Consul at Malaga.

The Consul at Malaga says that while the rates of wages have increased from ten to fifteen per cent within the last five years, the cost of living has increased forty per cent within the same period.

The Consul at Santander notes only a slight increase in wages in five years; the increase in the cost of living has more than counterbalanced any increase in the wages.

RESUME.

Having given statements showing the rates of wages and the retail prices of the necessaries of life in the several countries, together with the wages and food prices in New York, Chicago, and San Francisco, I now submit two general statements, which will enable you, at a glance, to compare the wages and prices of food in the several countries with each other and all with the wages and prices in the United States. I also submit herewith two tables, showing the wages and food prices in the principal cities of Europe, as compared with the wages and food prices in New York, Chicago, and San Francisco.

Statement showing the Weekly Rates of Wages in the several Countries, compiled from the Consular Reports published herewith and compared with Rates prevailing in the United States.

OCCUPATIONS.	Belgium	Denmark	France	Germany	Italy	Spain	United Kingdom.			United States.		
							England.	Ireland.	Scotland.	New York.	Chicago.	San Francisco.
Agricultural laborers:												
Men, without board or lodging			$3 15	$2 87	$3 50		$3 60	$3 40	$4 25			
Men, with board and lodging			1 36	1 48	1 80		2 60	1 30	1 50 to 2 40			
Women, without board or lodging			1 10	1 08	1 55		1 80	2 16	1 80 to 3 25			
Women, with board and lodging				75	60		1 15	75	60 to 1 00			
House-building trades:												
Bricklayers	$6 00		4 00	3 60	3 45	$5 12	8 12	7 58	9 63	$12 00 to 15 00	$6 00 to 10 50	$24 00 to 30 00
Carpenters and joiners	5 40	$4 25	5 42	4 00	4 18	4 88	8 25	7 33	8 12	9 00 to 12 00	7 50 to 12 00	12 00 to 21 00
Gasfitters	5 40			3 65	3 95		7 25	7 95	8 40	10 00 to 14 00	10 00 to 12 00	15 00 to 21 00
Masons	6 00	4 45	5 00	4 30	4 00	4 80	8 16	7 58	8 28	12 00 to 18 00	12 00 to 15 00	18 00 to 24 00
Painters	4 20	4 15	4 90	3 92	4 60		7 25	7 54	8 16	10 00 to 16 00	6 00 to 12 00	15 00 to 21 00
Plasterers	5 40			3 80	4 35	7 20	8 10	7 68	10 13	10 00 to 15 00	9 00 to 15 00	24 00 to 30 00
Plumbers	6 00		5 50	3 60	3 90		7 75	8 46	7 13	12 00 to 18 00	12 00 to 20 00	15 00 to 24 00
Slaters				4 00	3 90		7 90		8 30	10 00 to 15 00	12 00 to 18 00	15 00 to 18 00
General trades:												
Bakers	4 40	4 25	5 55	3 50	3 90	5 40	6 50		6 60	5 00 to 8 00	8 00 to 12 00	12 00 to 15 00
Blacksmiths	4 40	3 90	5 45	3 55	3 94	4 65	8 12		7 04	10 00 to 14 00	9 00 to 12 00	12 00 to 24 00
Bookbinders		3 72	4 85	3 82	3 90	3 60	7 83		6 50	12 00 to 18 00	9 00 to 20 00	15 00 to 24 00
Brass founders		4 20		3 20	5 49		7 40		6 90	10 00 to 14 00	8 00 to 15 00	
Butchers	4 50	4 50	5 42	3 85	4 20		7 23		4 75	8 00 to 12 00	12 00 to 18 00	12 00 to 18 00
Cabinetmakers	4 80		6 00	3 97	4 95	4 20	7 70		8 48	9 00 to 13 00	7 00 to 15 00	13 50 to 18 00
Coopers		4 10	7 00	3 30	4 35	4 95	7 30		6 10	12 00 to 16 00	6 00 to 15 00	13 50 to 18 00
Coppersmiths		3 85		3 30	3 90		7 40		7 10	12 00 to 16 00	15 00 to 20 00	13 50 to 18 00
Cutlers		3 85	4 63	4 00	3 90		8 00		6 25	10 00 to 13 00	15 00 to 10 00	11 50 to 16 50
Engravers				4 00	4 00		9 72		8 75	15 00 to 25 00	9 00 to 30 00	18 00 to 30 00
Horseshoers		3 85	5 40	3 25	3 50		7 20		7 00	12 00 to 18 00	15 00 to 25 00	15 00 to 21 00
Millwrights		4 00		3 30	4 95		7 50		7 50	10 00 to 15 00	12 00 to 20 00	21 00 to 30 00
Printers		4 62	4 70	4 80	3 90		7 75		7 52	8 00 to 18 00	12 00 to 18 00	15 00 to 22 50
Saddlers and harness makers	4 80	3 85	5 00	3 60	3 90		6 80		6 15	12 00 to 15 00	6 00 to 12 00	15 00 to 18 00
Sailmakers		4 85		3 30	3 90		7 30		6 33	12 00 to 18 00	12 00 to 15 00	24 00 to 30 00
Shoemakers		3 30	4 75	3 12	4 32	3 90	7 35		7 35	12 00 to 18 00	9 00 to 18 00	12 00 to 18 00
Tailors		4 10	5 10	3 58	4 30	3 90	5 00 to 7 30		7 00	10 00 to 18 00	6 00 to 18 00	8 75 to 13 75
Tinsmiths	4 80	3 90	4 40	3 65	3 60	3 90	7 30		6 00	10 00 to 14 00	9 00 to 12 00	15 00 to 21 00
Laborers, porters, etc.	3 00			2 92	2 60	3 00	5 00		4 50	6 00 to 9 00	5 50 to 9 00	9 00 to 12 00
Railway employés:												
Engineers, passenger trains			11 33	8 35	9 50		9 12	9 00	8 75			
Firemen, passenger trains			6 25	3 30	4 50		6 00	4 50	4 96			
Brakemen, passenger trains			3 60	3 22			5 50	4 00	4 69			
Signalmen			5 85	3 52	4 00		5 60	5 00	5 12			
Switchmen			5 50	3 41	4 00		5 60	5 00	5 19			
Porters			5 00	2 60	3 40		4 50	4 00	4 44			
Laborers			3 35	3 10	3 30		4 50	4 00	4 27			

Statement showing the Weekly Rates of Wages in the Principal Cities of Europe, compiled from Consular Reports, and compared with Rates in New York, Chicago, and San Francisco.

OCCUPATIONS.	Belgium.	France.	Germany.	Italy.	Spain.	Switzerland.	United Kingdom.	United States.		
	Brussels.	Bordeaux.	Dresden.	Rome.	Barcelona.	Geneva.	Liverpool.	New York.	Chicago.	San Francisco.
House building trades:										
Bricklayers	$6 00	$4 80		$3 00	$5 40	$4 80	$9 25	$12 to 15	$6 00 to 10 50	$24 00 to 30 00
Carpenters and joiners	5 40	5 00	$3 75	3 00	5 00	6 00	9 00	9 to 12	7 50 to 12 00	12 00 to 21 00
Gasfitters	5 40					4 60	7 80	10 to 14	10 00 to 12 00	15 00 to 21 00
Masons	6 00	5 40	3 75	3 00	6 00	4 80	8 70	12 to 18	12 00 to 15 00	18 00 to 24 00
Painters					7 00	4 60	8 50	10 to 16	6 00 to 12 00	15 00 to 21 00
Plasterers	5 40				7 00	4 60	9 72	10 to 15	9 00 to 15 00	24 00 to 30 00
Plumbers	6 00	6 00				4 60	9 00	12 to 18	12 00 to 20 00	15 00 to 24 00
Slaters						4 60	9 72	10 to 15	12 00 to 18 00	15 00 to 18 00
General trades:										
Bakers	6 00	4 80	3 50		5 40	4 80		5 to 8	8 00 to 12 00	12 00 to 15 00
Blacksmiths	6 00	4 80	4 00	3 30	4 50	4 80	8 90	10 to 14	9 00 to 12 00	12 00 to 24 00
Bookbinders	6 00	4 80	2 00		3 60	4 60	8 00	12 to 18	9 00 to 20 00	15 00 to 24 00
Brass founders			3 00	4 75	6 00		7 20	10 to 14	8 00 to 15 00	
Butchers	6 00	6 00	4 00			4 60		8 to 12	12 00 to 18 00	12 00 to 18 00
Cabinetmakers	4 80				4 20	6 00	8 00	9 to 13	7 00 to 15 00	13 50 to 18 00
Coopers	6 00	8 00			5 50	4 60	8 75	12 to 16	6 00 to 15 00	13 50 to 18 00
Coppersmiths	6 00		4 75			4 60	8 90	12 to 16	15 00 to 20 00	13 50 to 18 00
Cutlers	5 50	4 20	4 00			4 60		10 to 13	15 00 to 10 00	11 50 to 16 50
Engravers	6 00					4 80		15 to 25	9 00 to 30 00	18 00 to 30 00
Horseshoers	6 00	4 80					8 50	12 to 18	15 00 to 25 00	15 00 to 21 00
Millwrights							7 70	10 to 15	12 00 to 20 00	21 00 to 30 00
Printers	6 00	6 00	3 00		4 80	4 60	10 50	8 to 18	12 00 to 18 00	15 00 to 22 50
Saddlers and harness makers	4 80	4 80				4 60	7 30	12 to 15	6 00 to 12 00	15 00 to 18 00
Sail makers	6 00							12 to 18	12 00 to 15 00	24 00 to 30 00
Shoemakers	6 00	4 20	2 00	3 60	3 60	4 60	8 75	12 to 18	9 00 to 18 00	12 00 to 18 00
Tailors	6 00	4 80	3 00	3 60	3 60	4 80		10 to 18	6 00 to 18 00	8 75 to 13 75
Tinsmiths	4 80	4 80	3 00		4 00	4 80	7 50	10 to 14	9 00 to 12 00	15 00 to 21 00
Laborers, porters, etc.	3 50		2 50			3 00	5 82	6 to 9	5 50 to 9 00	9 00 to 12 00

Statement showing the Retail Prices of the Necessaries of Life in the several Countries, compiled from Consular Reports, published herewith, and compared with Prices in New York, Chicago, and San Francisco.

ARTICLES.	Belgium—In Cents	France—In Cents	Germany—In Cents	Italy—In Cents	Spain—In Cents	Switzerland—In Cents	United Kingdom.			United States.		
							England.	Ireland.	Scotland.	New York.	Chicago.	San Francisco.
Bread, per pound	4 to 5	3	3 to 7	6	6½ to 7½	4	3½ to 4½	4	4	4 to 4½	4 to 4½	*5 to 10
Flour, per pound		4	5½	10		7	3½ to 4½	4	4	3 to 4	2½ to 4½	2½ to 3
Beef—Roasting, per pound	20	22	22	30	18	30	22		22	12 to 16	8 to 12½	12 to 15
Soup, per pound	16	16	14	12		18	15		16	6 to 8	5 to 8	6 to 10
Rump steak, per pound	20	20	20	20		30	26½		26½	14 to 16	8 to 12½	15 to 20
Corned, per pound	16	16	13	12		18	18		20	8 to 12	4 to 7	10 to 15
Veal—Forequarter, per pound	16	16	14	15	25		18			8 to 10	6 to 10	8 to 12
Hindquarter, per pound	18	20		20		18	22½		25	10 to 12	10 to 12	12 to 18
Chops, per pound	20	22		22		20	27		30	20 to 24	12½ to 15	15
Pork—Fresh, per pound	16	14	17	13	24	18	16	10 to 12	13 to 16	8 to 10	4 to 5	15 to 18
Salted, per pound	16	14	17	18		20	15	10 to 12	13 to 16	8 to 10	6 to 12	10 to 15
Bacon, per pound	18	20	20	22			12 to 16			8 to 10	7 to 12	12 to 15
Ham, per pound	25	25	22	25	45	28	13 to 23		25	8 to 12	7 to 15	14 to 16
Shoulder, per pound	20	18	20	20			12			8 to 10	4 to 10	10 to 15
Sausage, per pound	20	16	19	20			18			8 to 10	6 to 10	15 to 20
Lard, per pound	20	20	21	22	21		15 to 18	12		10 to 12	6 to 10	12 to 15
Codfish, per pound				9	10		8		6	6 to 7	5 to 9	30
Butter, per pound	20 to 50	25	22	28	45	36	29 to 38	26½	32	25 to 30	16 to 40	15 to 25
Cheese, per pound	20 to 25		24	26	28	23	15 to 21		20	12 to 15	5 to 16	
Potatoes, per bushel	56	50	50	1 15	1 10	60	1 12 to 2 00	68	95	1 40 to 1 60	60 to 80	†1 00 to 1 50
Rice, per pound			9	6	7		3½ to 8		5	8 to 10	5 to 10	
Beans, per quart			10	13	12		9			7 to 10	5 to 9	
Milk, per quart			4	7		5	6 to 9		5	8 to 10	3 to 6	10
Eggs, per dozen	20 to 25	18	20	18	29 to 25	20	19 to 30	14	28	25 to 30	10 to 24	20 to 30
Oatmeal, per pound			8				3½ to 4½	3½	4	4 to 5	4 to 5	
Tea, per pound			75		70	50	43 to 88	80	70 to 88	50 to 60	25 to 1 00	70
Coffee, per pound	30 to 40	30	35	32	45	30	28 to 42		32 to 50	20 to 30	16 to 40	25 to 35
Sugar, per pound	15 to 20		11	8½	11	8	5½ to 9	8	10	8 to 10	7 to 10	8 to 10
Molasses, per gallon										60 to 70	40 to 80	1 00
Soap, per pound			10	4	10		5½ to 9			6 to 7	3 to 8	7
Starch, per pound			9	10	10		10 to 12		14	8 to 10	5 to 10	9
Coal, per ton			4 25	11 00	9 00		3 20 to 4 10		2 65	3 00 to 5 25	3 00 to 6 75	8 00 to 16 00

* Per Loaf. † Per 100 pounds.

Statement showing the Retail Prices of the Necessaries of Life in the Principal Cities of Europe, compiled from Consular Reports, and compared with same in New York, Chicago, and San Francisco.

ARTICLES.	Belgium.	France.	Germany.	Italy.	Spain.	Switzerland.	United Kingdom.	United States.		
	Brussels—In Cents.	Bordeaux—In Cents.	Dresden—In Cents.	Rome—In Cents.	Barcelona—In Cents.	Geneva—In Cents.	Liverpool—In Cents.	New York—In Cents.	Chicago—In Cents.	San Francisco. In Cents.
Bread, per pound	4 to 5	3 to 4	7	6		4	3½ to 4	4 to 4½	4 to 4½	*5 to 10
Flour, per pound			6	10	6¼	7	3½ to 5	3 to 4	2½ to 4½	2½ to 3
Beef—Roasting, per pound	20	20	24	20	20	30	22	12 to 16	8 to 12½	12 to 15
Soup, per pound	16	16	18	12	15	18	16	6 to 8	5 to 8	6 to 10
Rump, per pound	18	18	19	15	18	25	18	14 to 16	8 to 12½	15 to 20
Corned, per pound	16	16	18	12		18	16	8 to 12	4 to 7	10 to 15
Veal—Forequarter, per pound	16	16	12	15	15		14	8 to 10	6 to 10	8 to 12
Hindquarter, per pound	18	20	18	20	18	18	20	10 to 12	10 to 12	12 to 18
Cutlets, per pound	20	22	18	22	22	20	20	20 to 24	12½ to 15	15
Mutton—Forequarter, per pound	16	16	12	15	12		14	9 to 10	5 to 12½	7 to 8
Hindquarter, per pound	18	20	18	18	15	18	20	12 to 14	5 to 12½	12 to 15
Chops, per pound	20	20	18	18	18		20	14 to 16	10 to 15	15 to 18
Pork—Fresh, per pound	16	12	18	15	20	18	16	8 to 10	4 to 8	15 to 18
Salted, per pound	16	14	18	18	20	20	16	8 to 10	6 to 12	10 to 15
Bacon, per pound	18	20	30	25	30		20	8 to 10	7 to 12	12 to 15
Ham, per pound	20	25	35	30	40	28	24	8 to 12	7 to 15	14 to 16
Shoulder, per pound	16	16	30	25	30		16	8 to 10	4 to 10	10 to 15
Sausage, per pound	18	16	20	20			20	8 to 10	6 to 10	15 to 20
Lard, per pound	20		20	25	19		16	10 to 12	6 to 10	12 to 15
Codfish, per pound				10	9			6 to 7	5 to 9	
Butter, per pound	20 to 50		16	30	40	36	24 to 36	25 to 32	16 to 40	30
Cheese, per pound	20 to 25		33	28	25	23	12 to 20	12 to 15	5 to 16	15 to 25
Potatoes, per bushel	56	60	48	1 20	1 00	60	1 20 to 1 50	1 40 to 1 60	60 to 80	†1 00 to 1 50
Rice, per pound			10	5	6½		4 to 10	8 to 10	5 to 10	6
Beans, per quart			14	15	12			7 to 10	5 to 9	6
Milk, per quart				4	12	5	6 to 8	8 to 10	3 to 6	10
Eggs, per dozen	20 to 25	10 to 15		20	20	20	14 to 18	25 to 30	10 to 24	20 to 30
Oatmeal, per pound							3½ to 4	4 to 5	4 to 5	
Tea, per pound			75		60	50	40 to 85	50 to 60	25 to 1 00	70
Coffee, per pound	30 to 40		36	40	40	30	24 to 40	20 to 30	15 to 40	25 to 35
Sugar, per pound	15 to 20		12	8	10	8	5 to 8	8 to 10	7 to 10	8 to 10
Molasses, per gallon								60 to 70	40 to 80	1 00
Soap, per pound				4	9		4 to 10	6 to 7	3 to 8	8
Starch, per pound				10	9			8 to 10	5 to 10	9
Coal, per ton			3 10	11 00	9 00		3 65 to 4 38	3 00 to 5 25	3 00 to 6 75	8 00 to 16 00

* Per loaf. † Per 100 pounds.

Here are a number of most important points, deducible from these reports, which should be kept prominently and permanently in sight, in order that the relative conditions of labor in Europe and in the United States may be thoroughly appreciated. Some of these points are as follows:

1. The rates of wages in the United States, roughly estimated, are more than twice those in Belgium; three times those in Denmark, France, and Germany; once and one half those in England and Scotland; and more than three times those in Italy and Spain.

2. The prices of necessaries of life are lower in the United States than in any of the foregoing countries; that is, the laboring people of Europe cannot purchase the necessaries of life, which are common to the American working people, as low as the same can be purchased in the United States; or, vice versa, if the working people of the United States lived on the same quality of food, or comparatively the same, and exercised the same frugality as the working people of Europe, they could live as cheaply as the working people of any country in Europe.

3. That while the present depression of trade in Europe has undoubtedly intensified the sufferings of its working classes, these reports but recite their normal condition; and while the present depression in the United States will eventually give way to better times, the working people of Europe have no "better days" to look forward to; as they are born to unremitting toil and scanty fare, so must they toil and mourn to the end, or emigrate.

4. That more misery is caused by strong drink in many countries in Europe than by dull times, and that more misery is caused by strikes than even strong drink, for the workingmen may reform and recover from strong drink, but no community of workingmen can ever recover from a "long strike."

5. That some of the happiest working people of Europe may be said to be those whose wages are least, while some of the unhappiest may be classed among those whose wages are the highest. The former results from temperance and frugality, the latter from strong drink and strikes.

6. That the ruling classes of Europe look forward at all times to the destruction of this republic at the hands of its workingmen; they see their own labor populations kept in order by force, and they cannot conceive how the working people of the United States can be a law unto themselves; hence all strikes and riots in this country are hailed in Europe as so many outbursts foreboding the final dissolution of the republic.

7. That the capitalists of Europe show more sympathy and kindly feeling toward their working people than the latter do toward the capitalists, and that all the bitterness and violence are on the side of the workingmen.

8. That the railroads of Europe, especially those of France and Germany, are so conducted as to make the interest of the employés as identical with the interests of the company as is possible—which will be seen by reading the very interesting reports from La Rochelle, Lyons, and Paris, where they refer to the subject, for France; and the reports from Bremen, Chemnitz, and Frankfort-on-the-Main, for Germany—the results of which wisdom on the part of the companies may be summed up in a few words: Good conduct and steadiness

insure permanent employment at good wages, with the further incentive to the employés that economy and care in fuel and of the property of the companies, brings the employés a good percentage, which increases their annual wages considerably.

The Consul at La Rochelle, noting the good conduct of the French railway employés, says: "Brotherhoods, or other such organizations, are unknown. No strikes occur, and the relations between the employés and the companies are entirely harmonious."

The Consul at Lyons, who writes at length on the railway systems of France, says: "On the whole, there appears to be no valid reason why our railway employés, of every rank and condition, should not, on comparing their pay and condition with those of their brethren in France, be every way contented and satisfied."

9. That the average American workman performs from one and a half to twice as much work, in a given time, as the average European workman. This is so important a point, in connection with our ability to compete with the cheap labor manufactures of Europe, and it seems, on first thought, so strange, that I will trouble you with somewhat lengthy quotations from the reports in support thereof:

> *Denmark.*—Another evil is the diminished worth of wages, the descending quantity and quality of work now obtained by employers for wages higher than those paid ten years ago.—[From the report of the Consul at Copenhagen.
>
> *France.*—At his work the French laborer or mechanic lacks the energy of the American of the same class, and the amount of work executed by him is much less in the same number of hours. The hours of labor are from eleven to twelve, but an average American workman will accomplish as much in nine hours.—[From the report of the Consul at Bordeaux.
>
> *Germany.*—I am satisfied that an ordinary workingman in the United States will do as much again as will one in this district in the same time.—[From the report of the Consul at Chemnitz, Saxony.
>
> An active American workman will do as much work in a given time, at any employment, as two or three German workmen.—[From the report of the Consul at Leipsic.
>
> There can be no question that, speaking in general terms, the quality as well as the quantity of the work of the German artisans is inferior to that produced by the Americans. The workman here is inclined to be sluggish, and what he accomplishes is relatively small.—[From the report of the Consul at Sonneberg.

For the first time our manufactures are now assuming international proportions. At a time of universal depression we have met those nations which held a monopoly of the world's markets—met them in their strongholds, and established the fact that American manufactures are second to the manufactures of no other nation—and that, with a proper and patriotic understanding between capitalist and laborer, we can command a fair share of the buying world's patronage, and command that patronage with larger profits to the capitalist and higher wages to the laborer than can be made or paid in any other country.

There is something in the republic which gives an individuality to the people of the United States possessed by no other people to such a degree. Our inventive genius in mechanical appliances is original, and at least twenty-five years ahead of Europe. Our people accept innovation—are prepared for it by anticipation; Europeans do not. One workman in the United States, as will be seen from the foregoing extracts, does as much work as two workmen in most of the countries of Europe; even the immigrant from Europe attains this progressive spirit by a few years' association with American workmen. We have no oppressed and stupid peasantry, little more intelligent than the tools they handle. All are self-thinking, self-acting, and self-supporting.

Within the last fifteen years we have demonstrated our ability, by the brilliant development of our own resources, to exclude, by honest competition, foreign manufactures, to a large extent, from our shores. The question which now perëmptorily challenges all thinking minds is how to create a foreign demand for those manufactures which are left after supplying our home demands. We cannot stand still, for the momentum of increase will soon become so great that it will push us outward anyway; to push us safely and profitably is of so much importance as to almost overtop all other public questions of the hour. This question appeals equally to the selfishness and patriotism of all our citizens, but to the laborer it appeals with tenfold force, for without work he cannot live, and, unless we can extend the markets for our manufactures, he cannot expect steady work, and, unless our manufacturers can undersell foreign manufacturers, we cannot enlarge our foreign market.

The first great truth to be learned by the manufacturers and workingmen is that the days of sudden fortunes and double wages are gone. We must realize the fact that ocean steam communication has annihilated distance and brought the nations face to face. This drawing together of the nations means equalization in trade, profits, wages, etc., the advantage being with those who soonest accept the situation, and show the most sensible continuity in the new paths of success.

The Consul at Newcastle-upon-Tyne shows that that city is commercially nearer to New York than to London. If steam communication can thus bring one of the leading cities of a small island like England nearer to New York than to its own capital, it can work equal wonders with the leading seaport cities of all Europe in their commercial intercourse with the seaport cities of the United States. This is a question of great importance to both laborer and capitalist, for it must revolutionize all past theories of trade and commerce, by inaugurating international equalization.

In the near future, the workingman of New York cannot expect twice or thrice the wages of his fellow-worker in Europe, while all other things—food, rent, clothing, etc.—are on an equality; nor can the coal miner of Pennsylvania expect twice the wages of the Northumberland miner, while coal from the Northumberland mines can be landed in New York at less than the price of Pennsylvania coal.

Newcastle and New York.—During May, 1873, steamers were chartered from the Tyne to New York at $6 per ton, to take gas coals, which then cost $4 80 per ton, making the price of coals delivered in New York, including freight and insurance, $10 80 per ton.

Freights to New York have now reached the ridiculously low rate of 96 cents per ton, being 36 cents lower than to London. But Northumberland gas coal may now be delivered in New York (price, freight, and insurance) for $2 88 per ton. If coals were admitted free of duty, New York and other of our Atlantic cities might be furnished with fuel at a lower price than London; and the impetus which the abolition of this duty would probably give to our American wheat export trade is, at all events, worthy of careful consideration.—[From the report of Consul Jones.

In continuation of this question of international equalization, and what trade revolutions it can work when subsidized by steady and cheap labor, I shall quote from the report of the Consul at Dunferline an extract which, although only noting the building of an iron railway depot in Glasgow, is of great importance, and has astonished the iron workers and manufacturers of Scotland.

Scotch v. *Belgian Iron.*—While all the industries of the country are at present more or less depressed, I am not aware of any of them being more so than the iron trade. One of the reasons assigned is the damaging effects of foreign competition. Within the last year or two a large railway station has been erected at Glasgow, and it is a well known fact that all the iron required for its construction was brought from Belgium.

As Glasgow forms the center of the iron trade of Scotland, the circumstance above referred to is significant and startling.—[From a report of Mr. Walker, inspector of factories, on the iron trade of Scotland.

When steam has brought New York nearer to Newcastle than the latter is to London, and the steady, common sense, low priced labor of Belgium can compete with Scotland in the very center of her iron industry, and erect a railway station in Glasgow of iron brought from Belgium, even while the Scotch founders are on half time, there remains but one safe course for us to pursue, viz.: our American workingmen and their employers must go forward hand in hand, as in Belgium, if we would compete with the nations of Europe in the markets of the world.

Under no consideration must we have strikes; under no consideration must our factories lie idle. If our manufacturers cannot run their establishments profitably—and capital will no more remain permanently invested unprofitably than will labor work for nothing—and pay the prevailing wages, our working people must help them to make profit by consenting to a reduction of wages.

If our workingmen, native and naturalized, will only read these reports in that national spirit with which I have endeavored to point out some of the principal features therein, and drive from their midst communism, strikes, and drink—evil spirits born of oppression, and foreign to our country and institutions, fatal to them should these vicious principles ever attain national proportions—labor faithfully and intelligently, like freemen; live within their means, like frugal and sensible men; and choke down all demagogical attempt to divide the American people into hostile ranks as capitalists and laborers, there can be no reasonable limit set to the development of our manufactures and commerce; but if our trade centers are to be thrown into confusion, accumulated capital dissipated, and honest labor impoverished and demoralized by periodic strikes, we shall simply follow in the wake of the greatest commercial nation in the world, whose workingmen have blindly and madly ruined their bread source, and are now sorrowfully standing between their idle factories and the emigrant ships.

Let our workingmen read these reports and compare the fixed condition of the European labor populations, as graphically portrayed by our Consuls, with the free and independent position of our American workingmen, not as special depression has made them at present, but as they have been and as they will be again.

The workingman of Europe is born to labor through life; in labor must he continue to the end. There, indeed, are capital and labor severely and eternally divided, unless when some great upheaval in its madness pulls all things down to a common level. But in the United States the workingman of to-day may be the capitalist of to-morrow. Labor and capital are only divided by intelligence, industry, and pluck, and all honest, steady, sensible laborers work to become capitalists.

It is unfortunate that so many who have escaped from the bondage and travail of European labor, and become citizens of the United States, should so soon forget the wages, food, and condition from which they sought release through emigration, and show such small appreciation of their new and superior surroundings and condition as to seek, by strikes and organized violence—European methods of remedying European evils, and totally foreign to and subversive of republican institutions—to introduce strife where harmony and mutual reciprocity should alone prevail. It is equally deplorable, and more unaccountable, that so many native-born Americans should accept the teachings of the very worst school of Europe by countenancing or abetting strikes and communism.

Such things might be expected where the working people have no voice in the formation of the laws by which they are governed; but in a republic, where the people rule, resorts to violence to remedy existing evils only argue incapacity on the part of the violators of law.

But the great majority of American workingmen are intelligently true to the best interests of the republic, and the noisy and demoralizing few—for in a republic vice and demagogism, taking advantage of that freedom which was meant but for virtue alone, are always aggressive and violent—who keep irritating and goading the sensible majority, are public enemies, who eventually meet their merited punishment through the common sense of the people.

We are not a nation of capitalists and laborers; we are a nation of republican citizens. Let us, then, ignore these dividing lines, and, each accepting that position for which his capacity best fits him, work upward and onward in the scale of respectable citizenship, doing that which is best for all.

Let the workingman feel, as he should feel, that the man who employs him, who enables him to feed and clothe his wife and children, is his friend as well as his employer, and that all within and about the workshop are things to be protected, even with life if necessary, instead of being destroyed. Let the employer, on the other hand, as in Belgium and in Germany, look upon his workman as morally one of his family, to be treated with the dignity and sympathy which are his due, and in ten years we shall be known and felt in all the markets of the world, for under such circumstances neither cheap foreign labor nor the vast capital at its back could compete with the inventive genius, mechanical skill, and financial audacity of the workingmen and capitalists of the United States.

Weekly Wages Paid in Belgium and the United States.

OCCUPATIONS.	Brussels.	New York.	Chicago.	San Francisco.
Building trades:				
Bricklayers	$6 00	$12 00 to 15 00	$6 00 to 10 50	$24 00 to 30 00
Masons	6 00	12 00 to 18 00	12 00 to 15 00	18 00 to 24 00
Carpenters and joiners	5 40	9 00 to 12 00	7 50 to 12 00	12 00 to 21 00
Gasfitters	5 40	10 00 to 14 00	10 00 to 12 00	15 00 to 21 00
Painters	4 20	10 00 to 16 00	6 00 to 12 00	15 00 to 21 00
Plasterers	5 40	10 00 to 15 00	9 00 to 15 00	24 00 to 30 00
Plumbers	6 00	12 00 to 18 00	12 00 to 21 00	15 00 to 24 00
Blacksmiths	4 40	10 00 to 14 00	9 00 to 12 00	12 00 to 24 00
Bakers	4 40	5 00 to 8 00	8 00 to 12 00	12 00 to 15 00
Cabinetmakers	4 80	9 00 to 13 00	9 00 to 15 00	13 50 to 18 00
Saddle and harness makers	4 80	12 00 to 15 00	6 00 to 12 00	15 00 to 18 00
Tinsmiths	4 80	10 00 to 14 00	9 00 to 12 00	8 75 to 13 75
Laborers	3 00	6 00 to 9 00	5 50 to 9 00	9 00 to 12 00

It will be seen by the foregoing statement that the mechanics of Brussels do not receive anything like one half the wages received by the mechanics of New York, Chicago, and San Francisco.

To enable you to carry the comparison further, let me submit a statement showing the prices of the necessaries of life in both countries. I regret that the Belgian reports do not enable me to present as extended a list of articles as might be desirable, but the few articles given will enable you to apply the comparative rule to those not given.

Prices of the Necessaries of Life in Belgium and the United States.

ARTICLES.	Brussels—In Cents.	New York—In Cents.	Chicago—In Cents.	San Francisco—In Cents.
Bread, per pound	4 to 5	4½	5	*5 to 10
Beef, per pound	16 to 20	8 to 16	4 to 12½	10 to 15
Veal, per pound	16 to 20	8 to 24	6 to 15	10 to 15
Mutton, per pound	16 to 20	9 to 16	5 to 15	6 to 10
Pork, per pound	16 to 20	8 to 10	4 to 12	10 to 15
Lard, per pound	20	10 to 12	6 to 10	12 to 15
Butter, per pound	20 to 50	25 to 32	16 to 40	30
Cheese, per pound	20 to 25	12 to 15	5 to 16	15 to 25
Coffee, per pound	30 to 40	20 to 30	15 to 40	25 to 35
Sugar, per pound	15 to 20	8 to 10	7 to 11	8 to 12

*Per loaf.

The foregoing statements show that while the Belgian workingman does not receive one half the wages of the American workingman, the former pays more for the necessaries of life than the latter.

According to the report from Brussels, it appears that while the rates of wages in the mechanical industries have fallen off 25 per cent during the last seven years, agricultural wages have been steadily on the increase. This has been due to the great development in manufactures, and to that desire, which seems to pervade all peoples, more or less, for the excitement of city life, which continually draws off agricultural labor.

ITALY.

In the United States, and in the principal countries of Europe also, the idea of labor proper is, to a great extent, associated in the common mind with the Scandinavians, the British, the Germans, and the French; the Italians and the Spaniards in that same mind being sentimentally connected with that labor which basks in the sun and resorts to agriculture only when forced by their necessities. The Italian in an especial manner is always associated with musical itineracy, and all that lazy life which goes to complete the round of strolling vagabondage.

The better portion of Italian emigrants—especially the agricultural laborers—have sought homes in South America, while a large number of that class which at once suggests the name and the calling of the padrone, have found a better field for their peculiar talents in the United States, thereby helping to confirm old errors in the public estimation.

That nothing can be more erroneous than the foregoing ideas in regard to the labor population of Italy, will be duly appreciated by the most casual perusal of the reports from that country, herewith submitted.

These reports bear ample evidence to the fact that the working classes of Italy are as industrious, as frugal, and as patient under privation as any peasant population in Europe, and that her artisans and mechanics stand on a par with their class elsewhere.

Rates of Wages.—The weekly rates of wages paid to agricultural laborers in Italy, as averaged from the consular reports herewith submitted, are as follows:

Men, without board or lodging	$3 50
Men, with board and lodging	1 80
Women, without board or lodging	1 55
Women, with board and lodging	65

The rates of wages paid to the trades in Italy, as compared with the rates paid to similar trades in the United States, are as follows:

Weekly Wages in Italy, New York, Chicago, and San Francisco.

Occupations.	Italy.	New York.	Chicago.	San Francisco.
Building trades:				
Bricklayers	$3 45	$12 00 to 15 00	$6 00 to 10 50	$24 00 to 30 00
Masons	4 00	12 00 to 18 00	12 00 to 15 00	18 00 to 24 00
Carpenters	4 18	9 00 to 12 00	7 50 to 12 00	12 00 to 21 00
Gasfitters	3 95	10 00 to 14 00	10 00 to 12 00	15 00 to 21 00
Painters	4 60	10 00 to 16 00	6 00 to 12 00	15 00 to 21 00
Plasterers	4 35	10 00 to 15 00	9 00 to 15 00	24 00 to 30 00
Plumbers	3 90	12 00 to 18 00	12 00 to 21 00	15 00 to 24 00
Slaters	3 90	10 00 to 15 00	12 00 to 18 00	15 00 to 18 00
Blacksmiths	3 94	10 00 to 14 00	9 00 to 12 00	12 00 to 24 00
Bakers	3 90	5 00 to 8 00	8 00 to 12 00	12 00 to 15 00
Bookbinders	3 90	12 00 to 18 00	9 00 to 20 00	15 00 to 24 00
Shoemakers	4 32	8 00 to 12 00	9 00 to 18 00	12 00 to 18 00
Butchers	4 20	9 00 to 13 00	12 00 to 18 00	12 00 to 18 00
Cabinetmakers	4 95	12 00 to 16 00	7 00 to 15 00	13 50 to 18 00
Coopers	4 35	12 00 to 15 00	6 00 to 15 00	13 50 to 18 00
Coppersmiths	3 90	10 00 to 13 00	15 00 to 21 00	13 50 to 18 00
Cutlers	3 90	15 00 to 25 00	----------------	11 50 to 16 50
Engravers	4 00	12 00 to 18 00	9 00 to 13 00	18 00 to 30 00
Horseshoers	3 50	12 00 to 18 00	15 00 to 21 00	15 00 to 21 00
Millwrights	4 95	10 00 to 15 00	12 00 to 21 00	21 00 to 30 00
Printers	3 90	8 00 to 18 00	12 00 to 18 00	15 00 to 22 50
Saddlers and harnessmakers	3 90	12 00 to 15 00	6 00 to 12 00	15 00 to 18 00
Sailmakers	3 90	12 00 to 18 00	12 00 to 15 00	24 00 to 30 00
Tinsmiths	3 60	10 00 to 14 00	9 00 to 12 00	15 00 to 21 00
Tailors	4 30	10 00 to 18 00	6 00 to 18 00	8 75 to 13 75
Brassfounders	5 49	10 00 to 14 00	8 00 to 15 00	15 00 to 21 00
Laborers, porters, etc.	2 60	6 00 to 9 00	5 50 to 9 00	9 00 to 12 00

It will be seen by the foregoing table that the American tradesman receives more than three times as much wages as the Italian. It must not be inferred from this, however, that the Italian workingman cannot live comparatively well on his wages. The peculiar food on which he subsists—food which the American workman would not be satisfied with under any circumstances—can be purchased at such low rates as to enable him to do so. For instance, in Turin, according to the Consul's report, the laborer's daily expenses are, say 16 cents for food and 2 cents for lodging in a small room, where he has a family, "all stowed away in a single room."

In regard to what are considered by the American workingman as the necessaries of life, but which are considered luxuries by the Italian—luxuries never to be enjoyed save on great festivals, and then very sparingly—it will be seen by the following statement that they cost more in Italy than in the United States. It would, therefore, be impossible for the Italian laborer or mechanic to purchase such food out of his low wages.

Food Prices in Genoa, New York, Chicago, and San Francisco.

ARTICLES.	Genoa—In Cents.	New York—In Cents.	Chicago—In Cents.	San Francisco—In Cents.
Flour, per pound	7	3 to 4	2½ to 4½	2½ to 3½
Beef, per pound	18	8 to 16	4 to 12½	8 to 20
Pork, per pound	20	8 to 12	4 to 12	12 to 15
Lard, per pound	28	10 to 12	6 to 10	10 to 15
Codfish, per pound	10	6 to 7	5 to 9	3 to 4
Butter, per pound	30	25 to 32	16 to 40	20 to 35
Cheese, per pound	28	12 to 15	5 to 16	12 to 20
Rice, per pound	7	8 to 10	5 to 10	5 to 7
Beans, per quart	8½	7 to 10	5 to 9	4 to 6½
Milk, per quart	6	8 to 10	3 to 6	10
Coal, per ton	$11 00	$5 25	$3 00 to 6 75	$8 00 to 16 00

The Habits of the Laborers.—The habits and manner of living of the Italian working people can be best shown by quoting from the consular reports:

Genoa.—The fare of the Italian laborer is usually very simple, consisting of bread, boiled chestnuts, mush, and ministrone, a substantial soup made of vegetables, olive oil, and macaroni. This, with an occasional bottle of ordinary wine, a relish of stock fish or cheese, and, at rare intervals, on great festivals and holidays, a dinner of fresh meat, constitutes the homely fare of the Italian peasant.—[From the report of Consul Spences.

Rome.—The ordinary laborer's fare is coarse bread and cheese and raw onions in the morning; at midday, a substantial soup of vegetables and macaroni, with fat pork or olive oil, or a dish of polenta (mush); in the evening, bread and cheese with onions or salad, as the case may be, sometimes varied with stock fish. On very rare occasions mutton or goat's meat and wine are indulged in.—[From the report of Consul-General McMillan.

Turin.—The agriculturist, both farmer and laborer, lives very economically, hardly knows what fresh meat is, except half a dozen times a year, on state and church festivals. Sometimes he eats a little sausage, but his daily food consists of corn meal mush, rice bread, soups of wheat flour paste, rice, and sometimes a little lard in the soup by way of luxury, cheese, greens, and chestnuts in their season.—[From the report of Consul Noble.

Messina.—The laboring classes are frugal and industrious. Contented with little and living on what our workmen would despise, there is very little destitution among them.—[From the report of Consul Owen.

The Consul at Messina says that the condition of the working classes has very much improved under the present Government. The opening of public schools and the law which withholds the discharge of a soldier until he can read and write have been productive of good results.

NETHERLANDS.

The two reports herewith from the Netherlands, although not as full and minute as might be desired, are sufficiently so to enable you to form a fair idea of the present condition of labor in that country.

According to the report from Amsterdam, agricultural laborers are paid from $50 to $60, with board and lodging, and usually two suits of common clothes, per annum. Hired by the day they receive from 40 to 60 cents, without either board or lodging. The Consul at Rotterdam says that the wages of farm hands in his district average about 40 cents per day, without food or lodging.

An average from both reports shows the weekly wages of mechanics and laborers to be as follows: Bricklayers, masons, carpenters and joiners, painters, and plasterers, $3 60 to $6; shoemakers, $3 60 to $6 60; tailors, $3 60 to $6 80; laborers, porters, etc., $2 40 to $3 60.

Low as are the foregoing rates of wages, the Consul at Amsterdam says that they are from 25 to 35 per cent higher than they were five years ago, but that the cost of living has increased in even greater proportion, so that, with all his patient frugality and practical economy, the Dutch workingman has all he can do to maintain himself and family.

In regard to the food of the Dutch workingmen, the Consul at Rotterdam says: "Meat, excepting sausage and chipped beef, is regarded by the mechanic and laboring man as a luxury, and is rarely indulged in. Bread, rice, fish, potatoes, and other vegetables, constitute the staple articles of food for the laboring classes of the Netherlands."

DENMARK.

According to the report of the Consul at Copenhagen, the present rates of wages throughout Denmark are from ten to fifteen per cent less than they were in 1872, while the cost of living is somewhat higher. Agricultural laborers are paid as follows, computing the daily wages and averaging Summer and Winter:

Men, without board or lodging, per week	$1 85
Men, with board and lodging, per week	1 00
Women, without board or lodging, per week	1 25
Women, with board and lodging, per week	72
Women house servants, per year	19 00

Small as are these rates, they must be the maximum, for the Consul says that, "as a general rule, farm hands are employed at from $2 16 to $2 70 per month, without board and lodging." This would give an average of only about $31 per annum as the wages of agricultural laborers.

The wages paid to the several trades in Copenhagen, and the rates paid to similar trades in New York, Chicago, and San Francisco, will be seen by the following statement:

Weekly Wages in Copenhagen, New York, Chicago, and San Francisco.

OCCUPATIONS.	Copenhagen.	New York.	Chicago.	San Francisco.
Masons	$4 45	$12 00 to $18 00	$12 00 to $15 00	$24 00 to $30 00
Carpenters and joiners	4 25	9 00 to 12 00	7 50 to 12 00	12 00 to 21 00
Painters	4 15	10 00 to 16 00	6 00 to 12 00	15 00 to 21 00
Blacksmiths	3 90	10 00 to 14 00	9 00 to 12 00	12 00 to 24 00
Bakers	4 25	5 00 to 8 00	8 00 to 12 00	12 00 to 15 00
Bookbinders	3 72	12 00 to 18 00	9 00 to 20 00	15 00 to 24 00
Shoemakers	3 30	12 00 to 18 00	9 00 to 18 00	12 00 to 18 00
Butchers	4 50	8 00 to 12 00	12 00 to 18 00	12 00 to 18 00
Coopers	4 10	12 00 to 16 00	6 00 to 15 00	13 50 to 18 00
Coppersmiths	3 85	12 00 to 15 00	15 00 to 21 00	13 50 to 18 00
Cutlers	3 85	10 00 to 13 00		11 50 to 16 50
Horseshoers	3 85	12 00 to 18 00	15 00 to 21 00	15 00 to 21 00
Millwrights	4 00	10 00 to 15 00	12 00 to 21 00	21 00 to 30 00
Printers	4 62	8 00 to 18 00	12 00 to 18 00	15 00 to 22 50
Saddlers and harnessmakers	3 85	12 00 to 15 00	6 00 to 12 00	15 00 to 18 00
Sailmakers	4 85	12 00 to 18 00	12 00 to 15 00	24 00 to 30 00
Tinsmiths	3 90	10 00 to 14 00	9 00 to 12 00	15 00 to 21 00
Tailors	4 10	10 00 to 18 00	6 00 to 18 00	8 75 to 13 75
Brassfounders	4 20	10 00 to 14 00	8 00 to 15 00	15 00 to 21 00

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